

5.0 ENVIRONMENTAL CONSEQUENCES

The environmental consequences of constructing and operating the proposed North Baja Pipeline Project would vary in duration and significance. Four levels of impact duration were considered: temporary, short-term, long-term, and permanent. Temporary impact generally occurs during construction with the resource returning to preconstruction condition almost immediately afterward. Short-term impact could continue for up to 3 years following construction. Impact was considered long-term if the resource would require more than 3 years to recover. A permanent impact could occur as a result of any activity that modifies a resource to the extent that it would not return to preconstruction conditions during the life of the project, such as with the construction of a compressor station or meter stations. We considered an impact to be significant if it would result in a substantial adverse change in the physical environment.

In this section, general construction and operational impact and NBP's proposed mitigation are discussed for each resource. Site-specific impact is discussed by exception (*i.e.*, where it differs in a particular area from the general description of impact). We have recommended additional mitigation in an effort to reduce any significant impact to a less than significant level where we determine an impact could remain significant after NBP implements all of its proposed mitigation measures. These recommendations appear offset in boldface text. The staffs of the FERC and the CSLC will recommend to their respective Commissions that these additional mitigation measures be included as specific conditions to any approving Certificate or permit issued for the North Baja Pipeline Project.

Conclusions in the draft EIS/EIR and draft plan amendment are based on our analysis of the environmental impact and the following assumptions:

- NBP would comply with all applicable laws and regulations;
- the proposed facilities would be constructed as described in section 2.0 of this document; and
- NBP would implement the mitigation measures included in its application and supplemental filings to the FERC.

The environmental consequences of amending the BLM's CDCA Plan to allow for an exemption to the Energy Production and Utility Corridors Element of the CDCA Plan as well as the environmental consequences of amending the Yuma District Plan to allow NBP to cross the Milpitas Wash SMA are considered in this section. In accordance with BLM Manual guidance (H-1790-1), all BLM NEPA documents must address the following "critical elements of the human environment": 1) air quality; 2) ACECs; 3) cultural resources; 4) Native American religious concerns; 5) prime or unique farmlands; 6) floodplains; 7) threatened and endangered species; 8) hazardous or solid wastes; 9) drinking and groundwater quality; 10) wetlands and riparian zones; 11) Wild and Scenic Rivers; 12) Wilderness Areas; 13) environmental justice; 14) health and safety risks to children; and 15) invasive, non-native species. These critical elements are based on requirements specified in statute, regulation, or executive order. All of these critical elements are addressed in this document.

5.1 GEOLOGY

5.1.1 General Impact and Mitigation

Rock Excavation and Blasting

Construction and operation of the proposed project would not materially alter the geologic conditions of the project area. Effects from construction could include disturbances to the natural topography along the right-of-way and at aboveground facilities due to trenching and grading activities. Over most of the project area, the only alteration in topographic contours would be minimal grading of the construction right-of-way to provide a level and safe work surface. After completion of construction, topographic contours and drainage conditions would be restored as closely as practicable to their preconstruction state.

Since unconsolidated to poorly consolidated alluvial deposits underlie most areas that would be crossed by the proposed facilities, blasting to excavate the pipeline trench is not anticipated to be widespread. However, as discussed in section 4.1.1, the pipeline route would cross areas of exposed bedrock between MPs 28.5 and 31.6, specifically in areas where intrusive volcanic rocks and sedimentary rocks of the Bouse Formation are present. Blasting and/or an excavator with various hydraulic hammering attachments would likely be needed to remove rock from the trench in some locations within this milepost range. Blasting is discussed further in section 5.1.2.

Mineral Resources

No significant adverse impact on the current development or future expansion of mineral resources is anticipated. With the exception of the quarry operated by the BOR (see section 5.1.2), construction of the pipeline and associated aboveground facilities would not affect any known mineral resources; hinder mine reclamation or expansion efforts; or affect the availability of a known mineral resource of value locally, to the region, or to residents of Arizona and California.

Geologic Hazards

Seismicity (which includes active faults, ground shaking, and soil liquefaction) is the primary geologic hazard that could affect the proposed project facilities. The proposed facilities would be constructed and tested to meet Federal standards outlined in 49 CFR Part 192. These are the same regulations that govern the construction and operation of other natural gas pipelines throughout the country (including southern California, where seismic hazards are higher than elsewhere).

Active Faults and Seismic Ground Shaking - Although no active faults or fault zones would be crossed by the proposed pipeline facilities, seismic ground shaking would be a potential hazard to the pipeline facilities. Several faults in the vicinity of the project area have the potential of generating earthquakes that could cause strong ground motions. Damage to buried pipelines is most often caused by the differential movements of geologic material as opposed to shaking itself. Aboveground structures would more likely be damaged by ground shaking. Potentially hazardous ground failures caused by ground shaking include landslides, liquefaction, lateral spreading, settlement, and differential motions at soil-rock boundaries.

Although the pipeline route is located in a seismically active region and damage to the proposed facilities associated with an earthquake would be possible, the probability for strong ground accelerations in the immediate vicinity of the pipeline is relatively low. Furthermore, the potential risk of damage would be mitigated by NBP's compliance with DOT regulations and other standard pipeline industry design,

construction codes, and specifications. This conclusion is supported by O'Rourke and Palmer's 1996 study of earthquake performance data for steel transmission lines and distribution supply lines operated by SoCal over a 61-year period. This study found that post-1945 electric arc-welded transmission pipelines in good repair have performed very well in southern California earthquakes and are vulnerable only to very large and abrupt ground displacement.

Soil Liquefaction - Severe ground vibrations in cohesionless saturated sand and silt deposits can cause temporary increases in pore water pressure, which can cause soils to lose strength. For liquefaction to occur, a relatively shallow water table, rapid strong ground motions, and susceptible soils must all be present. Liquefaction can affect a pipeline by causing lateral spreading, loss of bearing strength, flow failures, subsidence, and flotation. Given the ductility of modern pipelines, little impact is likely to result from loss of bearing strength or flotation.

Lateral spreading, which involves the horizontal movement of competent surficial soils due to the liquefaction of an underlying deposit, is a potential hazard to pipeline integrity. Lateral spreads normally develop on very gentle slopes and involve displacements ranging from 3 to 6 feet. Flow failures are a greater potential hazard associated with liquefaction. They generally occur in saturated loose sands with ground slopes ranging between 10 and 20 degrees and can involve large amounts of material that could bend and weaken a pipeline along slopes. Subsidence can cause a pipeline to lose support and be at risk from overburden pressure.

Based on the depths to groundwater underlying the majority of the pipeline route (generally greater than 50 feet), and the low probability of significant ground acceleration in the region, pipeline failure due to soil liquefaction or associated ground failures is unlikely. However, liquefaction hazards may exist where groundwater is within 50 feet of the surface.

5.1.2 Site-specific Impact and Mitigation

Rock Excavation and Blasting

Blasting for trench excavation is anticipated in the Palo Verde Mountains between MPs 29.7 and 31.5 in Imperial County. Blasting may also be necessary near the crossings of SR 78 as well as other areas where bedrock is close to the surface (see table 4.2.2-1). If blasting is not controlled properly, it can cause damage to structures, existing pipelines, wells, and springs. Temporary effects of blasting could include hazards posed by uncontrolled fly-rock, and nuisances caused by noise, increased dust, and venting of gases following blasts. All blasting activities would be conducted in strict compliance with NBP's construction specification for blasting. This specification contains procedures for complying with applicable Federal, state, and local safety and environmental regulations, codes, and standards for the use, storage, and transport of explosives. NBP's compliance with these regulations would minimize blasting hazards.

Mineral Resources

The BOR operates a rock quarry between the Cibola NWR and SR 78. The pipeline route would cross the northern portion of the parcel on which the quarry lies from MPs 29.2 to 29.6. According to the BOR, the quarry is used intermittently to supply material for erosion control and has been idle for the past 2 years. Because of its close proximity to SR 78 and unsuitable material to the north and south of present quarrying activity, future expansion would be vertically and/or eastward and would not be affected by the pipeline. Therefore, the project would not affect quarry integrity or operation.

Furthermore, quarry operations would not have negative effects on the pipeline. At the distances the pipeline is located from current and future quarry operations, construction activities such as blasting would have no effect on the pipeline. Additionally, material hauling by trucks would be from off-highway locations that would not cross the pipeline and the pipeline would be designed to accommodate loads required for the crossing of SR 78 according to Caltrans specifications. NBP would notify the BOR prior to commencing construction activities in the vicinity of the quarry.

The BOR agrees that the pipeline would not affect quarry integrity or operation and is not concerned about potential effects of the quarry operations on the pipeline.

Geological Hazards - Soil Liquefaction

As discussed in section 4.1.3, potential liquefaction hazards have been identified along the pipeline route in the Palo Verde Valley and possibly in the vicinity of the All American Canal. Based on our review, we believe NBP should evaluate potential liquefaction hazards along the pipeline route that would place people and the pipeline at significant risk and then implement measures to eliminate or reduce this risk. Therefore, **we recommend that:**

- **NBP file with the FERC and the CSLC for the review and written approval by the Director of OEP before construction a Liquefaction Hazard Evaluation and Mitigation Study (LHEM Study). The LHEM Study should be performed in a manner consistent with CDMG Special Publication 117, *Guidelines for Evaluation and Mitigation of Seismic Hazards in California, Chapter 6, Analysis and Mitigation of Liquefaction Hazards* and identify mitigation measures proposed to eliminate or reduce potential risk. At a minimum, the areas evaluated in the LHEM Study should include:**
 - a. **the Ehrenberg Compressor Station site to the Rannells Trap site (MPs 0.0 to 11.7);**
 - b. **the vicinity of the All American Canal (MP 79.8); and**
 - c. **any other location where liquefaction hazard potential exists (*i.e.*, sandy and/or silty soils of low plasticity where groundwater is within 50 feet of the surface).**

5.1.3 Paleontological Resources

Paleontological resources could be affected by construction of the pipeline and associated aboveground facilities as well as by the resulting increased public access to these resources. Without mitigation, ground disturbance during construction could cause adverse impact on paleontological resources. The Antiquities Act of 1906 and the FLPMA of 1976 mandate the protection of significant paleontological resources on federally owned or controlled lands. The CEQA also requires the protection of paleontological resources in California. Direct physical modifications of paleontological resources could occur during project construction by activities such as grading or trenching. Indirect impact on fossil beds could result from erosion caused by slope regrading, vegetation clearing, and unauthorized collection. Avoidance of significant fossil localities is the most effective mitigation method. If avoidance is not possible, scientific excavation to recover fossil materials would reduce the impact to an acceptable level.

As discussed in section 4.1.4, , the pipeline route crosses areas categorized as having a high potential for fossils. NBP would retain a qualified field paleontologist to prepare a mitigation plan and monitor

construction activities in the areas designated as "high sensitivity" in table 4.1.4-1. Monitoring would consist of inspection of spoil piles and exposed surfaces for fossils. Significant fossil samples in these areas would be collected, categorized, and archived, and a report presenting the results of the paleontological monitoring would be submitted to the FERC, the CSLC, and the BLM.

Without reviewing NBP's paleontological mitigation plan, we cannot determine if impacts on paleontological resources would be minimized. Therefore, **we recommend that:**

- **NBP file with the FERC and the CSLC for the review and written approval of the Director of OEP before construction a Paleontological Resource Mitigation and Monitoring Plan (PRMM Plan) and the BLM's comments on the plan. At a minimum, the PRMM Plan should include:**
 - a. **a strategy for avoidance;**
 - b. **mitigation measures, including procedures for scientific removal, that would be implemented to protect and preserve any known fossil sites along the right-of-way or any sites discovered during construction;**
 - c. **provisions for the preparation and curation of any fossil collections; and**
 - d. **a protocol for the preparation of a final report based on the data recovery.**

5.2 SOILS

5.2.1 General Impact and Mitigation

Pipeline construction activities such as clearing, grading, trench excavation, backfilling, and the movement of construction equipment along the right-of-way may impact soil resources. Clearing removes protective vegetative cover and exposes the soil to the effects of wind, rain, and runoff, which increases the potential for soil erosion and sedimentation of sensitive areas. Grading, spoil storage, and equipment traffic can compact soil, reducing porosity and percolation rates and increasing runoff potential. Construction activities can also affect soil fertility and facilitate the dispersal and establishment of weeds.

Erosion is a continuing, natural process that can be accelerated by human activities. Clearing, grading, and the movement of equipment on the right-of-way can accelerate the erosion process and, without adequate protection, result in discharges of sediment to wetlands and waterbodies and lower soil fertility. Factors that influence the rate of erosion include soil texture and structure, the length and percent of slope, vegetative cover, and rainfall or wind intensity. The most erosion-prone soils are generally bare or sparsely vegetated, noncohesive, fine textured, and situated on moderate to steep slopes. Soils more resistant to erosion include those that are well vegetated, well structured with high percolation rates, and located on flat to nearly level terrain.

Construction equipment operating and traveling on the construction right-of-way, especially during wet periods and on poorly drained soils, can compact the soil. Soil compaction can also result from the storage of heavy spoil piles on certain types of soil for extended periods of time. Soil compaction destroys soil structure, reduces pore space and the moisture holding capacity of the soil, and increases runoff potential. If unmitigated, compaction results in soils with a reduced revegetation potential and an increased

erosion hazard. The degree of compaction depends on the moisture content and texture of the soil. Wet soils with fine clay textures are the most susceptible to compaction.

In addition to erosion and compaction, construction activities such as grading, trenching, and backfilling can cause mixing of soil horizons. Mixing of topsoil with subsoil, particularly in agricultural lands, dilutes the superior chemical and physical properties of the topsoil and lowers soil fertility and the ability of disturbed areas to revegetate successfully. Trenching of stony or shallow-depth-to-bedrock soils can also bring stones or rock fragments to the surface, which could interfere with agricultural practices and hinder restoration of the right-of-way.

Construction can also facilitate the establishment of noxious weeds where none or few existed. The clearing of existing perennial vegetation provides an opportunity for weed species to invade the right-of-way, and the movement of equipment along the right-of-way could transport weed seed and plant parts from one location to another (see section 5.5.2). The seriousness of these effects would depend on the prevalence of weeds in the area of the pipeline route, the type of weed and its method of reproduction and dispersal, and the weed's effect on current or future land use.

Contamination from spills or leaks of fuels, lubricants, and coolant from construction equipment could also have an impact on soils. This impact is expected to be minor, however, because of the typically low frequency, volume, and extent of spills or leaks on pipeline construction projects and NBP's implementation of its SPCC Plan described in section 5.3.1.1.

The impact of construction on soils can be effectively minimized through the use of erosion control and revegetation plans such as our Plan^{1/}. To minimize impact on soils associated with this project, NBP developed a CM&R Plan that includes the portions of the FERC Plan that NBP considers relevant to the project area and project-specific measures developed in consultation with the BLM and the CDFG that address the special issues associated with construction and restoration in an arid environment. The CM&R Plan is included in appendix D and consists of four parts:

Part I - Desert Restoration Plan - This plan identifies the unique natural characteristics of the project area and describes procedures that would be used to preserve and restore habitat values impacted by pipeline construction in the desert environment.

Part II - Erosion Control - This includes portions of the FERC Plan that NBP considers relevant to the project area and that are designed to minimize project-related construction impacts on soils and minimize erosion. Erosion control techniques would be coordinated with the appropriate Federal, state, and local agencies.

Part III - Wetlands and Waterbodies - This includes portions of the FERC Procedures that are considered relevant to the project area and are designed to minimize project-related disturbance to waterbodies and wetlands.

Part IV - Horizontal Directional Drill Plan - This plan contains specific procedures that would be used during the directional drill crossings of the Colorado River and All American Canal.

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The FERC Plan is a set of construction and mitigation measures that were developed in collaboration with other Federal and state agencies and the natural gas pipeline industry to minimize the potential environmental impact of the construction of pipeline projects in general. It is our position that proper implementation of the FERC Plan would adequately minimize construction-related impacts on soils.

Parts I and II of the CM&R Plan pertain to construction-related impact on soils and provide mitigation measures NBP would implement to reduce impact on soils during construction. These measures include:

- restricting the construction right-of-way width to 80 feet and further reducing the width of the right-of-way in areas with high concentrations of native trees;
- preservation of the seed bank by implementing topsoil segregation in non-agricultural areas and redistributing material over the right-of-way during cleanup thereby aiding in natural revegetation and erosion control;
- segregation of 1 to 2 feet of topsoil in agricultural areas;
- maintaining water flow in crop irrigation systems, unless shutoff is coordinated with affected parties;
- testing and mitigating for compacted soils;
- procedures to prevent or minimize the spread of noxious weeds or other undesirable species by limiting disposal of plant materials to suitable areas and cleaning of clearing and grading equipment before entering native species areas; and
- coordination with the BLM to identify locations where visual blocking would be employed to discourage use of the pipeline right-of-way by unauthorized vehicles.

The CM&R Plan modifies or omits several measures of the FERC Plan. According to NBP, portions of the FERC Plan are not applicable and the modifications and omissions to its CM&R Plan are appropriate due to the arid climate crossed by the pipeline route. The arid climatic conditions in the project area would limit the use or decrease the practical effectiveness of many traditional erosion mitigation measures. Artificial revegetation is not practical on a large scale due to the extremely arid conditions. Furthermore, infrequent but high intensity rainfall, combined with a naturally sparse vegetative cover, can create high magnitude runoff events, even in a relatively small drainage. Therefore, it is difficult to completely mitigate potential erosion effects.

We have reviewed NBP's CM&R Plan and generally agree with the level of mitigation proposed and the appropriateness of the differences between the CM&R Plan and the FERC Plan. Additionally, NBP indicates that the CM&R Plan incorporates the comments of the BLM and the CDFG. It is possible, however, that these and other agencies may include additional construction or mitigation measures when issuing permits and agreements, including the Streambed Alteration Agreement (SAA) (see section 5.3.2.4). Because the site-specific measures stipulated by permitting and land management agencies for Federal and state lands would take precedence over our requirements and may add to, modify, or make obsolete measures in the CM&R Plan, **we recommend that:**

- **NBP file with the FERC and the CSLC before construction a revised CM&R Plan that incorporates requirements of other jurisdictional agencies that are received after the issuance of the EIS/EIR.**

NBP would employ full time EIs to ensure compliance with the CM&R Plan during construction and restoration. At least two EIs would be assigned to each construction spread^{2/}. The EI would have peer status with other activity inspectors and would have the authority to stop and order corrective actions for activities that violate the environmental conditions of the FERC Certificate or other authorizations.

5.2.2 Site-specific Impact and Mitigation

Pipeline Facilities

As indicated in table 4.2.2-1, about 51.3 acres of soils with shallow depths to bedrock would be crossed by the pipeline route, primarily between MPs 11.4 and 31.0, and includes areas where blasting would be needed for trench excavation. Specific construction procedures would be used to minimize impact on soils and all blasting would be done according to applicable Federal, state, and local regulations (see section 5.1.2). Excess rock would be removed from the upper 12 inches of soil to the extent practicable in cropland, hayfields, pastures, residential areas, and other areas at the landowner's request. Additionally, excess rock would not be windrowed along the right-of-way unless written approval was obtained from landowners or land management agencies. Other soil limitations along the pipeline route include 29.1 acres of soils with high water erosion potential, with the majority occurring between MPs 0.2 and 11.4, and 124.1 acres of soils with high wind erosion potential, primarily between MPs 57.8 and 79.8. As discussed in section 5.2.1, implementing measures outlined in NBP's CM&R Plan would satisfactorily minimize and mitigate construction-related effects to these soils.

Significant impact on irrigation systems is not anticipated. With the exception of Rannells Drain, irrigation drains and canals would not be affected by construction of the pipeline because they would be crossed either by boring underneath the culverts along 18th Avenue or by installing the pipeline between the drain culvert and the road. Additionally, NBP would contact landowners in the Palo Verde Valley regarding the location of other irrigation systems that could be affected. Rannells Drain would be open cut and disturbed. The impact on Rannells Drain would be temporary and mitigated by restoring the banks and bed of the drain to their original configuration and stabilizing the banks of the drain with erosion control fabric upon completion of pipeline construction.

The interconnect pipeline would cross soil designated as prime farmland. The mainline pipeline between MPs 0.0 and 0.2 and MPs 0.8 and 11.6 would cross soil designated as prime farmland and farmland of statewide importance; however, impact on all but 1.7 miles of prime farmland and 0.2 mile of farmland of statewide importance would be avoided by placing the pipeline in the roadbed and road shoulder along 18th Avenue. In total, about 54.9 acres of soil identified as prime farmland or farmland of statewide importance would be disturbed during construction. Impact on these soils and other active farmlands would be mitigated by segregating topsoil before installation of the pipeline and reapplying topsoil over the surface of the right-of-way during restoration as outlined in the CM&R Plan. Construction of the proposed pipeline would not result in the conversion of prime farmland to non-agricultural uses.

Post-construction crop monitoring in order to maintain the level of production of the affected soils is an important mitigative component. NBP would ensure restoration of cropland through development and implementation of a crop monitoring program after construction. The program would evaluate crop productivity and success for a period of at least 2 years following construction. NBP would prepare activity reports during this period documenting any problems identified by the company or landowner and describing

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NBP currently proposes to build the pipeline using one general construction spread although a mini-spread experienced in congested area work would be assigned to the 18th Avenue segment. The compressor station would be constructed as a separate spread.

corrective actions taken to remedy these problems, and file these reports with the FERC and the CSLC on a quarterly basis, as stipulated in the CM&R Plan. We would also monitor the right-of-way after construction. If we determine that 2 years is not an adequate time frame to assess the success of restoration of cropland, we would require NBP to extend its crop monitoring program.

Aboveground Facilities

Prime farmland or farmland of statewide importance has been identified at the Ehrenberg Compressor Station site. The operation of this facility would preclude future agricultural uses and would result in the loss of important agricultural soils. Most of the 80-acre compressor station site in Arizona is situated on prime farmland soil. About 12.4 acres of this prime farmland soil would be permanently removed from agricultural use for the compressor station. This loss would equal less than 0.1 percent of the agricultural lands in the Palo Verde Valley.

Other potential soil effects associated with the aboveground facilities would be similar to those described for the pipeline and would be mitigated by NBP's use of its CM&R Plan.

5.3 WATER RESOURCES

5.3.1 Groundwater

5.3.1.1 General Impact and Mitigation

Although activities associated with construction of the proposed pipeline and aboveground facilities could affect groundwater resources, most potential impacts would be avoided or minimized by the use of both standard and specialized construction techniques. For the majority of the project, groundwater levels are generally well below the land surface that would be affected by construction activities. However, shallow aquifers underlying construction areas (*e.g.*, the Palo Verde Valley and portions of the route near the Cibola NWR) could experience minor impact from changes in overland flow and recharge caused by clearing and grading of the construction right-of-way. Near-surface soil compaction caused by heavy construction vehicles could also reduce the soil's ability to absorb water. These impacts would be temporary and minor and would not significantly affect groundwater resources or groundwater quality. Upon completion of construction, the ground surface would be recontoured and restored to ensure that the original overland flow and recharge patterns are restored. Routine operation and maintenance of the project components would not result in disturbance or contamination of groundwater resources.

Bedrock blasting would be necessary where competent bedrock is exposed at the surface or within the excavation depth of the trench. Blasting near groundwater wells could cause temporary changes in water level and turbidity and damage the water well. However, no water wells have been identified within 0.5 mile of anticipated blasting locations. Additionally, NBP's use of proper blasting techniques, which would fracture bedrock only to the point necessary for removal, would limit the effect of the blast to a local area above the aquifer in the proximity of the trenchline. Consequently, it is unlikely groundwater quality would be affected.

Refueling of vehicles and storage of fuel, oil, and other fluids during the construction phase of the project could create a potential long-term contamination hazard to groundwater resources. Spills or leaks of hazardous liquids could contaminate groundwater and affect users of the aquifer. Soil contamination could continue to add pollutants to the groundwater long after a spill has occurred. This type of impact would be

avoided or minimized by restricting the location of refueling activities and storage facilities and by requiring immediate cleanup in the event of a spill or leak.

NBP has prepared an SPCC Plan to address preventive and mitigative measures that would be used to minimize the potential impact of a hazardous waste spill during construction. The SPCC Plan specifies preventive measures such as regular inspection of storage areas for leaks, replacement of deteriorating containers, and construction of containment systems. The SPCC Plan also restricts refueling or other liquids transfer areas to at least 100 feet from all waterbodies, restricts refueling within 200 feet of any water supply well (400 feet for municipal wells), and provides additional precautions when specified setbacks cannot be maintained. Additionally, NBP's SPCC Plan identifies emergency response procedures, equipment, and cleanup measures in the event of a spill. We have reviewed NBP's SPCC Plan and believe that implementation of the plan would minimize the potential effects of a spill.

Dewatering of the pipeline trench may be required for short periods of time during construction in areas where there is a high water table. The potential effect on users of the aquifer would depend on the rate and duration of pumping and the location of the activity but is expected to be minor. Pipeline construction activities within a particular location are typically completed within several days; consequently, potential impacts are localized and temporary.

Water table elevations could be affected by construction activities such as trenching that would have an adverse impact on springs and wetland areas. These changes, however, are generally temporary and water table elevations would be quickly reestablished after the trench is backfilled. The alteration of the natural soil strata could result in new migration pathways for groundwater, particularly in wetland areas. These effects would be minimized by the construction of trench breakers between the upland/wetland interface and following other restoration provisions in the CM&R Plan.

5.3.1.2 Site-specific Impact and Mitigation

Potential impacts on public and private wells located within 150 feet of the proposed work corridor may include: contamination due to hazardous material spills, decreased yields, decreased water quality (such as an increase in turbidity or odor in the water), destruction of the well mechanics, or the complete drying up of the well. During initial project reviews, one water well at MP 7.9 was identified within 150 feet of the construction work area.

Before construction, NBP would conduct a field survey to verify the location of this well and any other water wells or springs that are identified within 150 feet of the construction work area. With the landowner's permission, NBP would test these water wells before construction to determine baseline flow conditions as a means of determining any potential construction-related impacts. Where impacts are reported by landowners, NBP would conduct post-construction water well tests. If it is determined that construction activities have impaired a well water quality or yield, NBP would either provide bottled water for drinking and arrange for an alternate source of water (such as a water truck) for other household uses, temporarily relocate the landowner until the water supply is restored, or compensate the landowner for losses. If water quality or yield is permanently impaired as a result of construction activities, NBP would arrange for a new well to be drilled or compensate the landowner.

During construction, significant amounts of groundwater may be encountered along 18th Avenue between MPs 2.3 and 11.4. To control the influx of groundwater into bore pits at road and canal crossings, the use of well points in addition to standard sump pump dewatering may be necessary. The water from these dewatering operations would be discharged to lined straw bale retaining pits to contain sediments and/or

otherwise filtered and discharged into field drains or canals. NBP would obtain the necessary permits to perform these operations. Minor fluctuations in local groundwater levels may occur, but would be temporary, as groundwater levels would quickly reestablish after activities have been completed.

The proposed pipeline route would pass within 700 feet of a former waste disposal/stockpile site at MP 5.7 and within 500 feet of a landfill at MP 26.4. Because the pipeline route does not cross these two sites, the depth to groundwater in the vicinity of the landfill, and the types of debris stockpiled at the former disposal site, impact on groundwater associated with past and present disposal activities is unlikely. In the event contaminated groundwater is encountered as evidenced by refuse and/or other debris in the trench, discoloration, odor, or other signs at these locations or other locations along the pipeline route, the area would be inspected prior to any further construction activity, appropriate agencies would be contacted, and the need for additional mitigation would be determined.

5.3.2 Surface Water

5.3.2.1 General Impact and Mitigation

Pipeline construction and hydrostatic testing could affect surface waters. Clearing and grading of streambanks, in-stream trenching, trench dewatering, and backfilling could affect waterbodies through modification of aquatic habitat, increased sedimentation, increased turbidity, decreased dissolved oxygen concentrations, stream warming, releases of chemical and nutrient pollutants from sediments, or introduction of chemical contamination such as fuel and lubricants.

The greatest potential impact on surface waters would result from suspension of sediments caused by in-stream construction or by erosion of cleared streambanks and rights-of-way. The extent of the impact would depend on sediment loads, stream velocity, turbulence, streambank composition, and sediment particle size.

Clearing and grading of streambanks would expose large amounts of soil to erosional forces and reduce fish cover along the cleared sections of the stream. The use of heavy equipment for construction could cause compaction of surface soils, which could result in increased runoff into waterbodies. This increased runoff could erode streambanks, resulting in increased turbidity and sedimentation rates in the receiving waterbodies. Erosion prior to right-of-way restoration and revegetation would be controlled through various soil stabilization procedures as described in NBP's CM&R Plan.

No alteration of existing drainage patterns would occur during construction that would result in substantial erosion or flooding due to an increase in the rate of surface runoff. The capacity of existing or planned stormwater drainage systems would not be affected. The project would not substantially degrade water quality or result in polluted runoff.

In-stream construction could cause the dislodging and transport of channel bed sediments and the alteration of stream contours. Changes in bottom contours can alter stream dynamics and increase downstream erosion or deposition, depending on circumstances. Increases in turbidity and sedimentation resulting from trenching, backfilling, and in-stream movement of construction equipment could affect light penetration and photosynthetic oxygen production, and could release chemical and nutrient pollutants from sediments. These effects tend to reduce the amount of dissolved oxygen in the water column, which could adversely affect the in-stream aquatic biota and the habitat value of the waterbody. In general, impact on the in-stream aquatic biota and the habitat value of the waterbody would be temporary or short term. However,

permanent effects could occur from altered stream geomorphology, resulting in accelerated erosion or depositional patterns.

In response to concerns raised by Federal, state, and local agencies regarding the potential environmental impact of the construction of pipeline projects in general, the FERC staff developed its Procedures to provide a minimum level of protection for surface waters that would be affected by pipeline projects. These waters include any stream or river with perceptible flow at the time of crossing and other permanent waterbodies such as ponds and lakes. During the development of the Procedures, the FERC staff evaluated the effectiveness of various crossing methods in mitigating potential impact on surface waters. The FERC Procedures specify construction time windows, in-stream construction duration constraints, sediment control procedures, and various fluming requirements to minimize potential impact of construction while providing an appropriate level of protection for a range of waterbody types.

As stated in section 2.3, NBP's CM&R Plan includes the portions of the FERC Procedures that NBP considers relevant to protect waterbodies in the project area. These measures include:

- locating all extra work areas at least 50 feet away from waterbody boundaries, where topographic conditions permit;
- limiting clearing of vegetation between extra work areas and the edge of the waterbody to the certificated construction right-of-way;
- maintaining adequate flow rates to protect aquatic life and prevent the interruption of existing downstream uses;
- restricting storage and refueling activities near surface waters;
- restricting spoil placement and control near surface waters;
- limiting use of equipment operating in the waterbody to that needed to construct the crossing;
- timing restrictions on in-stream work;
- requiring temporary erosion and sediment control;
- restricting trench dewatering;
- requiring bank stabilization and recontouring after construction; and
- limiting use of herbicides or pesticides for right-of-way maintenance in or within 100 feet of a waterbody except as specified by the appropriate land management or state agency.

Because NBP would install the pipeline across all of the flowing waterbodies crossed by the project using the directional drill or bore method or installing the pipeline between drain culverts and 18th Avenue, with one exception (see section 5.3.2.2), many of the measures of the FERC Procedures have been omitted from NBP's CM&R Plan. We agree with the appropriateness of NBP's CM&R Plan and believe its use would adequately minimize impact on surface waters.

Refueling of vehicles and storage of fuel, oil, or other hazardous materials near surface waters creates a potential for contamination if a spill were to occur. Immediate downstream users of the water could experience a degradation in water quality. Acute chronic toxic effects on aquatic organisms could result from such a spill. As discussed in section 5.3.1.1, NBP's SPCC Plan contains measures that would be used to mitigate the potential impact of a spill during construction.

5.3.2.2 Site-specific Impact and Mitigation

The majority of waterbodies that would be crossed by the pipeline are dry washes that do not support fisheries, provide critical aquatic habitat, or migratory passage for aquatic organisms. Additionally, none of the dry washes that would be affected have recognized recreation/high quality visual resource value. NBP proposes to cross these dry washes with typical cross-country construction methods, unless other methods are required by the CDFG SAA. Impact on dry washes would be limited to temporary alteration of beds and banks, loss of wildlife habitat, and possibly increased sediment load during initial storm events following construction. Discussions of impact on the vegetation, wildlife, and special status species associated with these washes are included in sections 5.5, 5.6, and 5.7, respectively.

Of the 32 flowing waterbodies crossed by the pipeline route, only Rannells Drain (MP 11.4) would be crossed using the open-cut method. In accordance with NBP's CM&R Plan, actual in-stream trenching within this waterbody would be completed within 48 hours, and impacts from construction-induced sedimentation and turbidity would be limited to temporary disturbances.

Construction across other canals and drains in the Palo Verde Valley would be completed in accordance with the PVID permit conditions and site-specific agreements with private landowners. The irrigation canals and drains in this area are constrained within culverts under 18th Avenue. NBP plans to cross these canals and drains either by boring underneath the culverts or by installing the pipeline between the drain culvert and the road. Boring beneath these culverts or installing the pipeline between the drain culverts and the road would avoid disturbance to the bed or banks of the waterbodies. Erosion control devices would be installed in accordance with NBP's CM&R Plan to protect these waters from sedimentation resulting from adjacent construction activities. Thus, no impact on canals and drains would be expected.

The Colorado River (MP 0.2) and the All American Canal (MP 79.8) are greater than 100 feet wide at the proposed crossing locations. NBP proposes to cross both waterbodies using the directional drill method (see figure 2.3.2-1 in section 2.3.2). Unlike a conventional open-cut crossing, directional drilling would not alter or remove streambed or streambank habitat, cause in-stream sedimentation, or interfere with fish movement. The primary impact that could occur as a result of drilling is an inadvertent release of drilling mud directly or indirectly into the waterbody. Drilling mud may leak through previously unidentified fractures in the material underlying the riverbed, in the area of the mud pits or tanks, or along the path of the drill due to unfavorable ground conditions. Drilling mud consists of naturally occurring nontoxic materials, such as bentonite clay and water. In small quantities, these materials could slightly increase turbidity levels but would not adversely affect vegetation, fish, or wildlife. In larger quantities, the release of drilling mud into a waterbody could affect fisheries or other aquatic organisms by settling and temporarily inundating the habitats used by these species. This impact would be less likely in fast moving water, which would disperse the drilling mud over a large area. Moreover, the impact of an inadvertent release would be substantially less than the impact associated with an open-cut crossing.

NBP has submitted a Horizontal Directional Drill Plan (see Part IV of the CM&R Plan in appendix D) that describes how NBP would conduct and monitor the drilling operations to minimize the potential for

inadvertent drilling mud releases or failure of the drill. It also includes procedures for cleanup of drilling mud releases and for sealing the hole if a drill cannot be completed.

NBP has also submitted site-specific directional drill crossing plans for the Colorado River and the All American Canal that show the drill entry and exit workspaces, the pipe fabrication and stringout areas, and the drill profiles. We have reviewed these plans and find them acceptable.

NBP has expressed confidence that the directional drills of the Colorado River and the All American Canal can be successfully completed because the results of its geotechnical investigations at these waterbodies indicate that stiff, cohesive soils conducive to the directional drill method are present at both crossing locations. Additionally, NBP's alignment at the Colorado River is only 200 feet north of the All American pipeline, which was successfully installed using the directional drill method. While these factors indicate that the directional drill of the Colorado River and the All American Canal would likely be successfully completed, directional drill operations can fail for various reasons. Causes of failure can include inability to complete the pilot hole or to maintain a stable open hole, loss of the hole opening tool because it becomes lodged or twists off, loss of the drill head due to obstacles that push the drill out of alignment during drilling, or inability to pull the pipe back through the hole.

If the directional drill fails at either or both crossings, NBP would use the open-cut method to install the pipeline. NBP has provided site-specific open-cut crossing plans that describe the proposed construction method and show the pipeline alignment and extra workspaces for both crossings. At the Colorado River, NBP would shift the alignment of its pipeline 200 feet north of the directional drill alignment to increase the separation from the All American pipeline. The alignment at the All American Canal would be the same as the directional drill alignment. NBP would adhere to the measures of the FERC Procedures to minimize the impact of an open-cut crossing. Neither waterbody is known to contain contaminated sediments.

We find NBP's open-cut crossing plan for the All American Canal to be acceptable. NBP's open-cut crossing plan for the Colorado River, however, does not provide adequate mitigation for the special status species and/or their critical habitat that occur in the river or on its banks (see table 4.7-1 in section 4.7). Because these special status species could be affected by an open-cut crossing of the Colorado River, **we recommend that:**

- **NBP not begin an open-cut crossing of the Colorado River until:**
 - a. **NBP files with the FERC and the CSLC the specific reasons that the directional drilling technique was not successful;**
 - b. **NBP files with the FERC and the CSLC a description of the mitigation measures that would minimize the extent and duration of disturbance to special status species and/or their critical habitat in or on the banks of the Colorado River;**
 - c. **the staff completes formal consultation with the FWS and the CDFG has made a consistency determination on the BO pursuant to Section 2080.1 of the California Fish and Game Code;**
 - d. **NBP has completed and filed with the FERC the results of consultations with the ADGF regarding measures to avoid or minimize impacts on state-listed species in Arizona; and**

- e. **NBP has received written notification from the Director of OEP that an open-cut crossing may begin.**

The COE has jurisdiction over the Colorado River under Section 10 of the Rivers and Harbors Act of 1899 and the BOR has jurisdiction over the All American Canal as a Federal irrigation system. These agencies would require NBP to submit an application for an open-cut crossing of these respective waterbodies for their review and approval before an open-cut crossing could begin. An open-cut crossing of the Colorado River would also require issuance of a COE Section 404 permit.

5.3.2.3 Hydrostatic Testing

Pipeline integrity would be verified through hydrostatic testing, which is conducted by pumping water into the pipe under pressure and checking for pressure loss resulting from leakage. NBP would hydrostatically test the pipeline using water obtained from the irrigation system at the Ehrenberg Compressor Station site. The source of this water is the Colorado River. NBP owns water rights sufficient to test the entire pipeline, and existing intake facilities are anticipated to be sufficient for hydrostatic testing purposes. The fill volume would be limited to 1,400 gallons per minute or 10 percent of streamflow, whichever is less. The water would be filtered prior to entering the pipe and no chemicals would be added to the test water.

NBP proposes to hydrostatically test the pipeline in six sections. The first section would be the 36-inch-diameter section from the Ehrenberg Compressor Station to the Rannells Trap, a distance of about 11.7 miles. An estimated 3.1 million gallons would be required to fill this section. The 30-inch-diameter pipeline from the Rannells Trap to the end of the project (a distance of about 68.1 miles) would be divided into five test sections. The 3.1 million gallons of water from the 36-inch-diameter test section would be moved into the first 30-inch-diameter test section and supplemented with about 1.8 million additional gallons of water. The water from the first 30-inch-diameter section would then be reused in subsequent sections until the tests of all sections are completed.

After testing, the water would be discharged from the last test section into the All American Canal. The test water would be filtered and discharged through an energy dissipation device at a rate of 6,000 to 10,000 gallons per minute utilizing foam dewatering pigs moving through the pipeline at a rate of 2 to 3 miles per hour.

All hydrostatic test activities would be conducted in accordance with the measures in NBP's CM&R Plan (appendix D), applicable permits (including coordination with the BOR), and DOT pipeline safety regulations as set forth in 49 CFR Part 192.

5.3.2.4 Streambed Alteration Agreement

The Colorado River and 579 dry desert washes would be crossed by the North Baja Pipeline Project in California. An SAA would be required from the CDFG for any work undertaken by NBP in or near the river or these washes.

As of February 1999, the CDFG cannot enter into an SAA unless such agreements have been subject to a CEQA review. Specifically, in order for the CDFG to process an SAA, the CEQA document must include:

- an analysis of the biological resources present at each site;

- copies of biological studies conducted at each site, including biological survey methodology;
- an analysis of the impacts of the proposed project on the streambeds; and
- a discussion of any alternative measures, avoidance measures, and mitigation measures that would reduce impacts to a level of insignificance.

Existing Biological Resources

Biological resources, including wetlands, vegetation, fish, wildlife, and special status species present along the pipeline route are discussed in detail in section 4.0. Section 4.0 discussions include descriptions of habitat types crossed, aquatic and terrestrial species occurring or potentially occurring along the route, and detailed reviews of protected species and their habitats.

The Colorado River is the prominent surface water feature in the region. This waterbody is a warmwater fishery and provides habitat for several special status species. The riparian vegetation adjacent to the river also provides habitat for a variety of wildlife. Additionally, the Colorado River is an important contributor to the region's biodiversity (Marshall *et al.*, 2000).

Two vegetative types are generally found along the desert washes crossed by the project: Sonoran creosote bush scrub and desert wash woodland. Desert wash woodland is the dominant community along well-defined washes. Although not the most common vegetation type crossed by the pipeline route, desert wash woodland provides greater structural diversity than the Sonoran creosote bush scrub due to its taller vegetation and higher density of vegetation. These characteristics increase the wildlife value of the desert wash woodland habitat type.

Biological Studies Conducted

NBP conducted a field-based habitat assessment of the route between July and September 2000 to determine the potential for the occurrence of protected species or their habitats and to ascertain information on vegetative communities within the project area. NBP conducted species-specific surveys for protected species identified by agencies as potentially occurring along the route during the spring of 2001. NBP's survey methods were designed in consultation with appropriate Federal and state agencies. Additional discussion of surveys for protected species is included in section 4.7.

Impact Analysis

This evaluation of potential impacts of the project on waterbodies focuses on biological resources associated with the feature, including wetlands, vegetation, fish, wildlife, and special status species. In general, impacts on biological resources along the pipeline route would be minor and temporary. Direct impacts would be limited to increased erosion and potential sedimentation of the dry washes during initial storm events following construction. Clearing of riparian vegetation would remove some available habitat and temporarily displace wildlife species to available adjacent habitats. Some individuals of less mobile species may be killed or injured by construction activities.

No impact on the Colorado River and associated riparian corridor is expected since the river and associated riparian vegetation would be directional drilled and the drill entry and exit points would be outside of the riparian zone.

Detailed discussions of potential impact on biological resources resulting from the North Baja Pipeline project are included throughout section 5.0. Impact on waterbodies crossed by the proposed project is discussed in section 5.3.2. Impact on vegetation and wildlife resources associated with those waterbodies is discussed in sections 5.5 and 5.6, respectively. Impact on protected species is discussed in section 5.7.

Impact Avoidance, Minimization, and Mitigation Measures

Biological resources were one of the factors considered during evaluation of route alternatives and variations (see sections 3.0 and 6.0). We have determined that with NBP's proposed mitigation and our additional recommended mitigation measures, construction and operation of the proposed project would not significantly affect biological resources.

Specific mitigation measures to minimize impact on biological resources are discussed in the respective subsections of section 5.0. Additionally, NBP developed its CM&R Plan (appendix D) to minimize impacts on the project area environment during construction. The CM&R Plan includes a discussion of proposed restoration activities and other mitigation measures. Measures NBP would use to avoid or minimize impacts on streambed resources include:

- reducing the width of the construction right-of-way in areas with high concentrations of native trees (section 5.5.2);
- implementing procedures to minimize and control the spread of noxious weeds or other undesirable species (section 5.5.2);
- use of best management practices to limit soil erosion (section 5.2);
- implementing final site preparation procedures to encourage natural revegetation (section 5.5.1);
- implementing general and specific conservation measures to avoid or minimize impacts on special status species and their habitats (section 5.7); and
- use of visual blocking measures (*i.e.*, placement of organic matter and rocks, raking the right-of-way to create a natural appearance, or planting of salvaged cactus and ocotillo) to discourage the use of the pipeline right-of-way by unauthorized OHV traffic (section 5.8.5.2).

The CDFG may include additional construction or mitigation conditions when issuing the SAA. We have recommended in section 5.2.1 that NBP file a revised CM&R Plan with the Secretary before construction that incorporates the additional requirements of the CDFG, if any.

The CDFG has stated that the agency may require offsite, compensatory mitigation for disturbances to wildlife habitat located between the banks of the dry desert washes. Mitigation requirements would most likely include replacement of cleared vegetation at the ratio of 1:1 for Sonoran creosote brush scrub and 3:1 or more for desert wash woodland. Specific mitigation requirements would be included in the SAA.

5.4 WETLANDS

5.4.1 General Impact and Mitigation

Construction of the North Baja Pipeline Project would temporarily disturb a total of 3.5 acres of wetland area in four separate wetlands. Table 5.4.1-1 lists the wetlands that would be crossed, the NWI classifications, the length of each wetland crossing, and the acres of each wetland that would be affected during construction and operation of the proposed facilities.

TABLE 5.4.1-1					
Wetlands Crossed by the North Baja Pipeline Project					
Approximate Milepost	County, State	Wetland Identifier	NWI Classification <u>a/</u>	Crossing Length	Acres Temporarily Affected <u>b/</u>
0.1	La Paz, AZ	P26-WE-1	PSS/PEM	250	0.0 <u>c/</u>
0.2	La Paz, AZ	P24-WE-1	PSS	50	0.0 <u>c/</u>
2.7	Riverside, CA	N55-WE-3	PEM	70	0.1
28.2	Imperial, CA	N68-WE-29	PSS	360	0.7
28.3	Imperial, CA	N69-WE-29	PSS	970	1.8
28.5	Imperial, CA	N70-WE-29	PSS	515	0.9
79.8	Imperial, CA	D18-WE-81C	PEM	15	0.0 <u>d/</u>
79.8	Imperial, CA	P1-WE-80	PEM	20	0.0 <u>d/</u>
Total				2,250	3.5
<p><u>a/</u> NWI Wetland Classification (Cowardin <i>et al.</i>, 1979): PSS = Palustrine scrub-shrub PEM = Palustrine emergent</p> <p><u>b/</u> NBP states that it does not plan to actively maintain the permanent right-of-way. However, since NBP has the right to maintain a 10-foot-wide strip centered over the pipeline, about 0.4 acre of wetland would be in an area that could be maintained as emergent wetland.</p> <p><u>c/</u> Impact on the wetland would be avoided by the directional drill under the Colorado River.</p> <p><u>d/</u> Impact on the wetland would be avoided by the directional drill under the All American Canal.</p>					

The primary impact of pipeline construction and right-of-way maintenance activities on wetlands would be the short-term alteration of wetland vegetation. These effects would be greatest during and immediately following construction. In emergent wetlands, the impact of construction and operation would be brief, since the herbaceous vegetation would regenerate quickly after construction and would not be disturbed during pipeline operation. The impact on scrub-shrub wetlands would be greater since the woody vegetation in these wetlands would regenerate more slowly after construction than herbaceous species. Construction of the project would result in "no net loss" of wetlands because none of the wetlands would be permanently drained or filled.

Other types of impacts associated with construction of the pipeline could include temporary changes to wetland hydrology and water quality, temporary lowering of the water table, and increased turbidity during trenching and restoration activities. During construction, failure to segregate topsoil over the trenchline in nonsaturated wetlands could also result in the mixing of the topsoil with the subsoil, which could lower biological recruitment of native wetland vegetation after restoration. In addition, inadvertent compaction and furrowing of soils during construction could result from the temporary stockpiling of soil and the movement of heavy machinery, which could in turn alter the natural hydrologic patterns of the wetlands, inhibit seed

germination, or increase the potential for siltation. Construction clearing activities and disturbance of wetland vegetation could also temporarily affect the wetland's capacity to buffer flood flows and/or control erosion.

In general, the potential effects of pipeline construction would be successfully mitigated by NBP's adherence to its CM&R Plan (appendix D). NBP would also comply with the COE's Section 404 permit conditions and obtain appropriate state-issued Section 401 water quality certifications or waivers.

As stated in section 2.3, NBP's CM&R Plan includes the portions of the FERC Procedures that NBP considers relevant to protect wetlands in the project area. These measures include:

- prohibiting storage of hazardous materials, chemicals, fuels, and lubricating oils within a wetland or within 100 feet of a wetland boundary;
- requiring that native vegetation on the right-of-way within wetlands be cut at ground level, leaving existing root systems in place to promote regrowth;
- requiring segregation of the uppermost 1 foot of wetland topsoil from the underlying subsoil in areas disturbed by trenching;
- limiting the operation of construction equipment within wetlands to that equipment essential for clearing, excavation, pipe installation, backfilling, and restoration activities;
- requiring all nonessential equipment to traverse around wetlands using upland access roads to the maximum extent practicable;
- requiring installation of temporary erosion controls across the construction right-of-way on any slopes leading into wetlands immediately after the initial disturbance of soils on the right-of-way and regular inspection and maintenance of temporary erosion controls after installation;
- minimizing duration of construction-related disturbance within wetlands; and
- consulting with the appropriate land management or stage agency and developing plans for active revegetation of wetlands affected by construction.

One mitigation measure of the FERC Procedures that NBP did not incorporate into its CM&R Plan is the provision to limit the width of the construction right-of-way in wetlands to 75 feet or less. NBP did not incorporate this requirement because four of the eight wetlands crossed by the project would be avoided by the directional drills of the Colorado River and the All American Canal. One of the other four wetlands would be crossed within the 60-foot-wide construction right-of-way along 18th Avenue. The other three wetlands that would be crossed are scrub-shrub wetlands that contain a high percentage of tamarisk, which is considered a weed species.

We agree that it would not be necessary for NBP to reduce the width of its construction right-of-way to 75 feet in these three wetlands. As stated in section 5.3.2.2, if NBP's proposed directional drill crossings are not successful and NBP must construct across the Colorado River or All American Canal using the open-cut method, NBP would adhere to all of the measures in the FERC Procedures. This would include the 75-foot right-of-way width limit in wetlands. We also agree that the other measures of our Procedures that are omitted from the CM&R Plan are not necessary in the arid climate crossed or are not directly applicable to

the project. We believe that NBP's use of its CM&R Plan and compliance with the COE's Section 404 permit conditions would adequately protect wetland resources crossed by the pipeline route.

5.4.2 Site-specific Impact and Mitigation

The two wetlands associated with the Colorado River (250 feet and 50 feet wide at MPs 0.1 and 0.2, respectively) and the two wetlands associated with the All American Canal (15 and 20 feet wide at MP 79.8) would not be affected by the project if the directional drilling of these waterbodies is completed successfully.

NBP indicated in its application that maintenance of vegetation in wetlands after construction would be restricted to that needed for periodic corrosion/leak surveys, or 10 feet of permanent right-of-way. The 10-foot-wide maintained corridor would result in a permanent conversion of 0.4 acre of scrub-shrub wetland to emergent wetland.

The emergent wetland at MP 2.7 would be affected within the 60-foot-wide construction right-of-way along 18th Avenue. Impacts on this wetland would be temporary and minor and the wetland would be expected to revegetate quickly.

No long-term adverse impact on wetlands would result from the proposed project. The vegetation within the three wetlands between MPs 28.2 and 28.5 is predominantly tamarisk, which is a noxious weed species. NBP's clearing of an 80-foot-wide right-of-way through these wetlands during construction would reduce the amount of tamarisk occurring along the project corridor. Clearing of tamarisk could provide opportunities for the re-establishment of native vegetation.

5.5 VEGETATION

5.5.1 General Impact and Mitigation

The primary impact of the project on vegetation would be the cutting, clearing, and/or removal of existing vegetation within the construction work area. The degree of impact would depend on the type of vegetation affected, the ease with which the vegetation would regenerate after construction, and the frequency of vegetation maintenance by the pipeline company during operation. Existing vegetation would be disturbed everywhere along the right-of-way except for the 9.1 miles where the pipeline would be installed within 18th Avenue and the 0.8 mile where the pipeline would be installed by directional drilling. Woody vegetation would be cut off at the ground and removed to the edge of the right-of-way. Where grading is required, rootstock would be removed with the topsoil. On flat terrain where grading is unnecessary, herbaceous vegetation and woody root material would be left in place but would be driven over by equipment or covered with spoil for extended periods.

Secondary effects associated with these disturbances to vegetation would include increased soil erosion by wind and water (see section 5.2), increased potential for the introduction and establishment of invasive weedy species (see section 5.5.2), and a local reduction in available wildlife habitat (see section 5.6.1).

Construction would disturb a total of about 747.4 acres of vegetation. Table 5.5.1-1 lists the amount of each vegetation type that would be affected by the project. Construction through agricultural areas would have the least impact. The vegetation growing in these areas is regularly disturbed, receives ample water through irrigation, and would quickly reestablish on the right-of-way following replanting by the farmers. Impact on riparian vegetation growing in and along irrigation canals and drains would also be minor. This

vegetation is regularly cleared out during dredging operations by the PVID and has quickly reestablished in the past. Additionally, most of the riparian vegetation crossed by the pipeline route would be avoided by NBP's plans to construct a portion of pipeline within the 18th Avenue roadway as opposed to the adjacent agricultural land. NBP would also bore, install the pipeline between drain culverts and 18th Avenue, or drill rivers and all but one canal and drain.

TABLE 5.5.1-1						
Acreage of Vegetative Communities Affected by the North Baja Pipeline Project						
Facility	Acres Affected					
	Agriculture	Sonoran Creosote Bush Scrub	Desert Wash Woodland	Wetland Communities	Non-Wetland Tamarisk	Total
Construction						
Interconnect Pipeline	—	1.0	—	—	—	1.0
Mainline Pipeline <u>a/</u>	56.3	572.2	96.9	3.5	3.9	732.8
Aboveground Facilities	12.4	1.2	—	—	—	13.6
Total	68.7	574.4	96.9	3.5	3.9	747.4
Operation						
Interconnect Pipeline	—	0.6	—	—	—	0.6
Mainline Pipeline <u>a/</u>	13.3	349.7	59.4	0.4	2.4	425.2
Aboveground Facilities	12.4	1.2	—	—	—	13.6
Total	25.7	350.9	59.4	0.4	2.4	439.4
<u>a/</u> Includes temporary extra workspaces.						

The removal of desert vegetation would have a local but longer-term impact. The arid environment characteristic of these habitats is not conducive to plant growth and would slow the regeneration of vegetation following construction. Moreover, because of the dryness of these areas, regeneration by actively seeding or planting is typically ineffective. Natural regeneration of these areas would take years and in some cases could take more than a century.

NBP proposes to allow natural revegetation of the construction right-of-way after construction since active revegetation efforts such as seeding and active planting generally fail in the desert due to the arid environment. To aid in the natural revegetation process, NBP proposes to stockpile topsoil in graded areas to conserve the existing seedbank. During restoration, the topsoil would be respread evenly across the surface of the right-of-way. In areas where grading is not required but vegetation must be removed, NBP would leave the underground roots of woody plants intact. Vegetation that must be cut would be stored at the edge of the right-of-way and respread over the right-of-way during or after final grading to provide a mulch to trap seeds, shade seedlings, and conserve water for the revegetation of the right-of-way. In areas where topsoil is removed, this material would be spread with the topsoil. Lastly, during final restoration, NBP proposes to imprint disturbed soils with equipment (*e.g.*, sheep'sfoot) that would create indentations to catch seeds and water, aiding in the natural revegetation of the construction right-of-way.

NBP would supplement natural revegetation of the construction right-of-way by salvaging larger species of cactus (primarily *Opuntia*) and ocotillo. Immediately prior to ground-disturbing activities, NBP would remove select cactus and ocotillo from the right-of-way. NBP would store and then replant these cactus and ocotillo after pipeline installation. Sites for replanting cactus and ocotillo would be selected to assist in OHV control (see section 5.8.5.2 and appendix D).

NBP proposes to implement an experimental program to assess the effectiveness of natural revegetation versus supplemental seeding and cactus salvage. This program would include the establishment of study plots in the major native cover types found along the pipeline route (*i.e.*, Sonoran creosote bush scrub and desert dry wash woodland). Treatment plots would receive two different seed mixes and two different application rates; control plots would be established in undisturbed areas immediately adjacent to the right-of-way. NBP would collect data over a 5-year period so treatment plots could be statistically compared to control plots.

NBP would annually monitor areas of desert vegetation disturbed by construction for 5 years after construction is completed. Results of the monitoring and the experimental seeding and cactus salvage program would be provided in full annual reports to the BLM for the first, second, and fifth year after construction. Data from annual surveys would be provided to the BLM for the third and fourth years. The fifth-year report would provide an overall summary of the success of mainline restoration and the experimental seeding and salvage programs. While NBP has agreed to provide the reports to the BLM, no commitment has been made to provide the reports to us. Therefore, **we recommend that:**

- **NBP file with the FERC and the CSLC copies of the full annual reports of the desert vegetation monitoring and the experimental seeding and cactus salvage program for the first, second, and fifth year after construction.**

5.5.2 Site-specific Impact and Mitigation

Pipeline

No unique, rare, or special concern vegetation types would be affected by the project. About 573.2 acres of Sonoran creosote bush scrub, 96.9 acres of desert wash woodland, 56.3 acres of agriculture, 3.9 acres of non-wetland tamarisk, and 3.5 acres of wetland would be disturbed by construction of the interconnect and mainline pipelines. Of the vegetation that would be disturbed, the most sensitive is the desert wash woodland. Desert wash species growing in microphyll woodland, such as ironwood, blue palo verde, and smoke tree, provide structural diversity, cover, and forage for many more wildlife species than the Sonoran creosote bush scrub habitat. Removal of trees from these woodlands during construction could reduce wildlife diversity and habitat.

Based on aerial photographs, NBP identified six woodland areas with high concentrations of native trees (*i.e.*, 15 crowns per 500 linear feet of pipeline) where it proposes to minimize tree clearing by reducing the width of the right-of-way from 80 feet to 50 feet. NBP indicates it would conduct a field survey prior to construction to determine where reducing the right-of-way to reduce clearing native trees would be warranted and feasible. Because these native trees are an important resource in the project area, **we recommend that:**

- **NBP file with the FERC and the CSLC for the review and written approval of the Director of OEP before construction a list of locations where the right-of-way width would be reduced to preserve native trees based on field surveys of the final pipeline construction right-of-way.**

As proposed in the CM&R Plan, trees that cannot be avoided would be subjected to one of several treatments (prune, limb, or remove) based on proximity to the pipeline centerline. By pruning or limbing trees rather than removing them, many trees within the right-of-way may be preserved.

No impact on the riparian corridor adjacent to the Colorado River is anticipated since the crossing would be completed via directional drill. The drill would pass 40 to 50 feet below the bed of the Colorado River. Because the root zones of the vegetation adjacent to the Colorado River are primarily less than 15 feet deep, the adjacent riparian vegetation would not be expected to be affected by the drill. Removal of riparian vegetation along the Colorado River would not occur during construction or maintenance of the pipeline. Therefore, the habitat diversity added to the region by the Colorado River and its adjacent vegetation would not be compromised by the North Baja Pipeline Project.

As part of the SAA, the CDFG may require compensatory mitigation for habitat loss associated with construction in or near rivers, streams, or lakes that flow at least intermittently through a bed or channel. Potential mitigation is discussed in section 5.3.2.4.

Open-cut trenching through Rannells Drain (MP 11.4) would have a short-term impact on vegetation growing in and on the banks of the drain. This vegetation is routinely removed during drain maintenance by the PVID and has re-established itself in the past after dredging. Therefore, we expect the vegetation in Rannells Drain to regenerate on its own from existing seed and vegetative propagules within 2 years after construction.

Aboveground Facilities

Since the site of the Ehrenberg Compressor Station, Ehrenberg Meter Station, and associated facilities is predominantly agricultural fields, the permanent conversion of 12.4 acres of land to an industrial/commercial use would have minimal impact on native vegetation. The permanent loss of 1.2 acre of Sonoran desert bush scrub for the proposed Rannells Trap and Ogilby Meter Station would not significantly reduce this vegetative type in the general area. Additionally, since the proposed site for the Ogilby Meter Station is so close to I-8, the vegetation in this area provides only limited wildlife habitat.

Noxious Weeds and Other Invasive Plants

The removal of existing vegetation and the disturbance of soils during construction could create optimal conditions for the invasion and establishment of exotic-nuisance species. Construction equipment traveling from invasive weed-infested areas into weed-free areas could also facilitate the dispersal of invasive weed seed and propagules and result in the establishment of noxious weeds in weed-free areas. During the scoping process, TNC of Arizona and the CNPS both identified the potential for construction to facilitate the colonization of invasive non-native weeds on disturbed soils as a major concern. Additionally, the spread of exotic or noxious weeds has been identified as one of the most harmful threats to the biodiversity of the Sonoran Desert area (Marshall *et al.*, 2000). The potential severity of the noxious weed impact would depend on the species, prevalence in the area prior to construction, and the intensity of the construction-induced dispersal.

During botanical surveys conducted in March and April 2001, NBP identified four exotic-nuisance species in significant numbers along the pipeline route (Foster Wheeler Environmental Corporation, 2001c). These include African mustard, Australian saltbush, fountain grass, and tamarisk. To minimize the spread of noxious weeds from non-native to native plant communities, NBP proposes the following mitigation measures:

- In accordance with Executive Order 13112, the construction area within lands administered by the BLM would be surveyed by a qualified noxious weed authority that would identify all noxious weeds present and provide a list to the authorized officer. A determination

would be made by the authorized officer of any noxious weeds that require flagging for treatment prior to construction. Treatment would be according to instruction of the authorized officer. Any use of herbicides in California would be handled by properly licensed county agricultural agents.

- Prior to construction, populations of plants listed as invasive exotics by the California Exotic Plant Pest Council in its most recent invasive plant *List A* (List-1 and A-2) and *Red Alert* list, as well as any other species listed on the *BLM National List of Invasive Weed Species of Concern* already existing in native desert habitat where construction is planned, would be identified on the ground and on maps through a preconstruction survey. This would establish a baseline from which to locate equipment washdown stations as well as to evaluate post-construction monitoring surveys.
- Disposal of soil and plant materials from non-native areas would not be allowed in native areas. That is, no disposal or transfer of excess spoils or plant materials from non-native areas would be allowed into native cover type areas.
- All construction equipment would be washed prior to entering the construction area to prevent the spread of invasive weeds from other areas. Clearing and grading equipment would be washed down with high-pressure water prior to moving from infested areas to non-infested areas. Construction personnel would be educated on weed identification and the importance of controlling and preventing the spread of invasive non-native species infestations. Gravel and/or fill material to be placed in relatively weed-free areas would come from weed-free sources. Certified weed-free hay bales would be used. Post-construction monitoring and treatment of invasive weeds would be implemented (see the CM&R Plan in appendix D).

Additionally, NBP proposes to conduct surveys for non-native plant species after construction is complete. The results of these surveys would be compared to the preconstruction surveys (Foster Wheeler Environmental Corporation, 2001c) to determine locations of weed infestations attributable to the project. NBP would conduct these surveys and implement control measures (*e.g.*, herbicide application, pulling by hand) twice a year for 2 years after construction is complete. NBP would also implement weed control measures as part of routine maintenance and operation of the pipeline. NBP would include the results of its weed control program with the reports of its general desert vegetation monitoring (see section 5.5.1).

5.6 WILDLIFE AND AQUATIC RESOURCES

5.6.1 Wildlife Resources

5.6.1.1 General Impact and Mitigation

The impact on wildlife species and their habitats from construction and operation of the North Baja Pipeline Project would vary depending on the requirements of each species and the existing habitat present along the pipeline route. Construction and operation of the pipeline would directly impact wildlife through disturbance, displacement, and mortality. Additionally, the project would result in short-term, long-term, and permanent alterations of available habitats.

Clearing the construction right-of-way would result in the temporary loss of wildlife habitat and the displacement of wildlife from these areas. Depending on the season, construction could disrupt the courting

or nesting of birds and breeding of other wildlife on or adjacent to the right-of-way. Smaller, less mobile, wildlife, such as small mammals and reptiles, could be crushed by construction equipment or entrapped in trenches. Other wildlife, such as birds and larger mammals, would leave the project area as construction activities approach. These animals may relocate into similar habitats nearby; however, the lack of adequate territorial space could force these animals into suboptimal habitat and could lower reproductive success and survival. Increased densities of animals in these habitats due to relocation of displaced individuals could also reduce reproductive success of animals not displaced by construction. Some wildlife would return to the newly disturbed areas and adjacent, undisturbed habitats soon after completion of construction.

The primary impact of the project on wildlife habitat would be the cutting, clearing, and/or removal of existing vegetation within the construction work area. The degree of impact would depend on the type of habitat affected, the ease with which the vegetation would regenerate after construction, and the frequency of maintenance activities by the pipeline company during operation (see section 5.5.1). Construction through agricultural areas would have the least impact. The vegetation growing in these areas is regularly disturbed, receives ample water through irrigation, and would quickly reestablish on the right-of-way following replanting by the farmers. The removal of desert vegetation would have a local, but longer-term impact. The arid environment characteristic of these vegetation habitats is not conducive to plant growth and would slow the regeneration following construction. In some areas it may take over 100 years for even small trees to regrow in desert dry wash woodland disturbed by pipeline construction. The relatively slow regeneration of forested communities within the temporary right-of-way would result in the long-term loss of habitat for those species that utilize these communities. As discussed in the CM&R Plan, NBP would implement measures to avoid or minimize impacts on wildlife habitats as well as facilitate the recovery of native vegetation communities.

Construction of the Ehrenberg Compressor Station, Rannells Trap, and the Ogilby Meter Station would permanently replace existing wildlife habitats. The Ehrenberg Compressor Station would remove from production about 12.4 acres of agricultural land, a habitat type that is widely available in the Palo Verde Valley. The Rannells Trap and Ogilby Meter Station would displace about 1.2 acres of Sonoran creosote desert bush scrub. Although these sites can provide habitat for various wildlife, construction of the Ogilby Meter Station and the Rannells Trap is not expected to have a substantial adverse effect on wildlife in the area.

Another potential long-term or permanent, albeit indirect, impact of the project would be the increased level of human-wildlife interaction in the project area. By creating a new right-of-way, the project would add to the existing matrix of open desert, jeep trails, dry washes, and cleared rights-of-way currently attracting OHV users. This impact would be somewhat lessened because about 63 percent of the pipeline route is in or adjacent to existing rights-of-way. In addition, NBP has stated that it has no plans to maintain an improved permanent right-of-way for operation and maintenance of the pipeline facilities. However, NBP would have to maintain access to all portions of the permanent right-of-way by four-wheel drive vehicles in order to conduct emergency and periodic maintenance. Although NBP would work with the BLM to identify areas where blocking the right-of-way from OHV use would be appropriate and practical, this project could increase the accessibility to existing wildlife habitats by OHV users.

NBP proposes a number of conservation measures for special status species that are discussed in section 5.7. Implementation of these conservation measures would also serve to avoid, minimize, or compensate for impacts on general wildlife and their habitats.

5.6.1.2 Site-specific Impact and Mitigation

Migratory Birds

Executive Order 13186 was signed by former President Clinton in January 2001 to, among other things, ensure that environmental analyses of Federal actions evaluate the effects of actions and agency plans on migratory birds, with emphasis on species of concern. Some impact on migratory birds could result from habitat loss associated with construction of the North Baja Pipeline Project. This effect would be small because of the relatively small amount of habitat affected by the project. Additionally, the mitigation measures described in section 5.5 for vegetation communities would reduce the duration of impacts on these species.

Managed and Sensitive Biological Resource Areas

The Cibola NWR is east of the proposed pipeline route near MPs 29.5 to 33.0. A portion of the proposed route near the refuge (around MP 29.7) is characterized by steep slopes and several incised washes associated with the Palo Verde Mountains foothills. Blasting would likely be required in this area. Although much of the Cibola NWR near the pipeline route is dominated by relatively poor quality habitat (tamarisk monoculture), overall the refuge is inhabited by over 240 species of birds, numerous mammals, and several protected species. Construction of the North Baja Pipeline Project would not directly affect wildlife or wildlife habitat within the refuge. Noise associated with construction activities could, however, indirectly impact wildlife by temporarily displacing wildlife from areas within the refuge that would be near the construction right-of-way. The impact would be greater if construction activities coincide with the breeding season of wildlife that use the refuge. Because of the year-round vehicle and boat traffic associated with SR 78 and the Colorado River, wildlife in the area are expected to be somewhat acclimatized to noise disturbances.

The pipeline route crosses special management areas in the vicinity of the Milpitas Wash between MPs 29.2 and 52.0. As described in section 5.7, NBP proposes a number of conservation measures protecting wildlife and special status plants that are generally consistent with objectives of the management plans addressing activities in the Milpitas Wash area.

As described in section 4.6.1, two landscape-scale conservation sites identified by TNC would be crossed by the pipeline route. These conservation sites are areas that, with proper management, would help ensure the long-term persistence of the biodiversity in the Sonoran Desert. One of the landscape-scale conservation sites includes the Colorado River and adjacent riparian areas, which would be crossed by the pipeline route at about MP 0.2. Potential impact on this conservation site is discussed in section 5.3.2.2. The other conservation site includes the Chocolate Mountains, which would generally be crossed between about MPs 27.0 and 34.0. Conservation measures that NBP would employ to minimize or avoid impacting biodiversity at these landscape-scale conservation sites are discussed in section 5.7. Impacts on resources within these conservation sites are not expected to adversely affect biological diversity in the region.

5.6.2 Aquatic Resources

5.6.2.1 General Impact and Mitigation

There would be no direct impact on fisheries resources. Of the 32 flowing waterbodies crossed by the pipeline route, only one, Rannells Drain, would be open cut. Rannells Drain does not have a classified fishery. The other waterbody crossings would be installed by directional drilling (Colorado River and All

American Canal) or by boring or installing the pipeline between drain culverts and 18th Avenue (29 drains and canals). Section 2.3.2 describes special construction techniques across these water resources in greater detail.

Hydrostatic testing of the pipeline would be conducted with water obtained from the irrigation system at NBP's Ehrenberg Compressor Station site. The Colorado River is the primary source of this water, which would be withdrawn from existing intakes. The test water would be discharged into the All American Canal. Water withdrawal has a small potential to entrain fish eggs and juvenile fish. To minimize the potential for this impact, NBP would cover the intake with an adequately sized mesh screen to reduce the potential for fish and fish egg entrainment. Chemicals would not be added to the water. Therefore, impacts on water quality would not be expected from hydrostatic testing and impacts on fishery resources would be minimal.

A chemical or fuel spill in or near a waterbody could release contaminants, which could affect fish directly or indirectly through changes in food sources or by contaminating the water resources. NBP's adherence to the CM&R Plan (appendix D) and the SPCC Plan (discussed in section 5.3.1.1) would reduce the potential of a spill and decrease the response time for control and cleanup of a spill, should one occur. Therefore, the probability of a spill of hazardous materials would be small and the likely impact on fisheries would be negligible.

5.6.2.2 Site-specific Impact and Mitigation

The proposed open-cut crossing of Rannells Drain would temporarily increase the sediment load in the drain. The drain has not been dredged for 15 years and as a consequence is not free flowing. It is connected through the Palo Verde Lagoon and a series of other drainage structures to the Colorado River, but does not contain fishery resources because of its shallow depth and stagnant conditions. NBP proposes to use sediment curtains downstream of the trench during construction to trap sediments and prevent the transport of sediment downstream. The sediment collected by the curtains would be removed the next time the drain is dredged for agricultural purposes.

Directional drilling beneath any feature carries with it a small risk of inadvertent releases of drilling mud. NBP proposes to directionally drill beneath both the Colorado River and the All American Canal. If an inadvertent release occurs under or near these waterbodies, drilling mud could enter the water of the river or canal. Bentonite clay, the principal lubricant in the drilling mud, is very fine clay that could cover fish or amphibian eggs and cut off their oxygen supply. To address this concern, NBP has prepared a Horizontal Directional Drill Plan (see Part IV of the CM&R Plan in appendix D) that would minimize the impact of an inadvertent release in or near these waters on aquatic communities.

If the directional drill fails at the Colorado River or All American Canal and the drilled crossing cannot be completed, NBP proposes to install the pipeline using the open-cut method. NBP has provided site-specific open-cut crossing plans for both waterbodies and states that it would complete the crossings in accordance with the FERC Procedures. For the Colorado River, a warmwater fishery, this would include completing the crossing between June 1 and November 30, unless expressly permitted by the CDFG and the ADGF. The Colorado River, however, contains habitat for several special status fish species that could potentially be affected by an open-cut crossing (see section 5.7). Because NBP's site-specific open-cut crossing plan does not contain mitigation measures to protect the habitat of these special status species, we have recommended in section 5.3.2.2 that NBP not begin an open-cut crossing of the Colorado River until mitigation measures to protect these species are filed with the FERC and the CSLC and the staff completes consultation with the FWS and the CDFG.

We find NBP's open-cut crossing plan for the All American Canal to be acceptable and have determined that an open-cut crossing would not have an adverse impact on fishery resources.

5.7 SPECIAL STATUS SPECIES

5.7.1 General Impact and Mitigation

In general, the impacts of the project on special status species would be the same as described for vegetation, wildlife, and aquatic resources. However, the magnitude and duration of these impacts could be greater for special status species, because their distribution and relative abundance usually are more limited than species discussed in sections 5.5 and 5.6. Special status plants in the pipeline right-of-way would be lost when the right-of-way is cleared, and special status animals could be affected by the temporary loss of habitat during construction. Mobile individuals would likely be displaced to other habitat but could be lost because of intraspecific competition, predation, or other stresses. Immobile species and juveniles could be destroyed. Construction of aboveground facilities would result in a permanent loss of habitat. Special status species could also be affected where blasting is required.

NBP would implement the following general minimization and conservation measures to reduce the impact of the project on special status species:

- NBP would develop and implement an environmental training program prior to the start of work. All employees and contractors working in the field would be required to complete an environmental training session before beginning work on the right-of-way. The program would include discussions of the biology, distribution, and ecology of special status species within the geographic area of construction; protection afforded such species under applicable Federal and state laws and regulations; all protection measures that must be followed to protect such species during project activities; penalties for noncompliance; reporting requirements; and the importance of compliance with all protection measures. To ensure proper focus, emphasis would be placed on the specific aspects of compliance applicable to the particular audience's activities on the project.
- Employees and contractors would be informed during one or more training sessions that they are not authorized to handle or otherwise move listed species at any time, including while commuting to work sites or at a work site.
- NBP would hire and designate at least two EIs per construction spread who would be responsible for overseeing project environmental protection measures including those for special status species. Environmental inspection procedures would be in compliance with the relevant provisions of NBP's CM&R Plan. NBP would also hire and designate at least one qualified biologist who would be responsible for identification of habitat and individuals of special status species and for implementation of all measures calling for a qualified biologist's intervention. The biologist would, if needed, hold the required permits or formal agreements with appropriate Federal and state agencies for the survey or handling of any special status species.
- An authorized biologist would conduct a preconstruction survey of each project component located within areas identified during NBP's surveys as listed species habitat no more than 7 days prior to the onset of activities.

- Project personnel would exercise caution when commuting to the construction area to minimize any chance for the inadvertent injury or mortality of species encountered on major roads leading to and from the construction area. NBP's contractors and employees would report all such incidents directly to the EI.
- Existing routes of travel and approved access roads would be used to and from construction areas. Cross-country travel by vehicles and equipment would be prohibited. Except on county or state-maintained roads, vehicle and equipment speeds would not exceed 25 miles per hour within potential habitat of a listed species.
- Qualified biologists would monitor all work where prior NBP surveys have documented the occurrence of one or more listed species. In conjunction with NBP's EIs, the biologist would have the authority to halt all non-emergency actions that might result in harm to a listed species, and would assist in the overall implementation of protection measures for listed species during project activities.
- All trash and food items generated by construction and maintenance activities would be promptly contained and regularly removed from the project site to reduce the attractiveness of the area to common ravens and other desert predators.
- Firearms and domestic pets would be prohibited from work sites.
- Employees and contractors would look under vehicles and equipment for the presence of special status species prior to movement. If a special status species is observed, no vehicles or equipment would be moved until the animal has left voluntarily or is removed by a biologist authorized to do so.
- Pipeline construction activities between dusk and dawn would be limited to emergencies only (*i.e.*, issues involving human health and safety) with the exception of the directional drill operations at the Colorado River and the All American Canal.
- Open pipeline trenches, auger holes, or other excavations that could entrap wildlife would be inspected by an authorized biologist a minimum of three times per day, and immediately prior to backfilling. In habitats supporting special status species, pipe segments would be capped or taped closed each night. Such pipe segments would be inspected regularly before sealing. For open trenches, earthen escape ramps would be maintained at appropriate intervals. Other excavations that remain open overnight would be covered or ramped to prevent entrapment of wildlife.
- If a listed species is located during construction, and a contingency for avoidance, removal, or transplant has not been approved by the FWS or appropriate agency, NBP would not proceed with project activity in that location until specific consultation with the FERC, the FWS, the BLM, and/or other appropriate agency is completed.
- All encounters with listed species would be reported to the biologist, who would record the following information:
 - a. species name;
 - b. location (narrative and maps) and dates of observations;

- c. general condition and health, including injuries and state of healing;
 - d. diagnostic markings, including identification numbers or markers; and
 - e. locations moved from and to.
- Upon locating a dead or injured listed species, NBP would notify the FWS and appropriate state wildlife agency. Written notification would be made within 15 days of the date and time of the finding or incident (if known) and would include: location of the carcass, a photograph, cause of death (if known), and other pertinent information.
 - The pipeline construction right-of-way would be limited to 80 feet in width, with the exception of authorized extra workspace areas. The construction right-of-way would be clearly staked and flagged in advance of construction. The construction area includes approved work areas for the pipeline, compressor and meter stations, the facilities at Rannells Trap, access roads, and staging and pipe storage areas.
 - Where desert wash woodland tree densities equal or exceed 15 crowns per 500 feet of centerline, NBP would narrow the construction corridor to 50 feet. Areas of this narrower construction width would be uniquely identified in the field, staked, and flagged in advance of construction.
 - At the conclusion of work, all trenches and holes would be completely filled, surfaces cleaned and smoothed, and each site recontoured to match the original profiles as closely as possible.
 - All stakes, flagging, and fencing used to delineate and protect any environmental or cultural feature in the construction area would be removed no later than 30 days after construction and restoration are complete.
 - With the exception of fenced facilities, all materials and equipment would be removed from the area upon completion of work.
 - Upon completion of project activities, NBP would submit a standardized report to the FERC for distribution to other agencies, including the FWS. The report would document the effectiveness and practicality of the conservation measures, the number of individuals of each species excavated from their burrows or removed from the site, the number of individuals killed or injured, and other pertinent information. The report would also make recommendations for modifying the stipulations in order to enhance the protection of species in the future. The final report would provide the actual acreage disturbed by project activities by habitat type.

Site-specific impacts and additional species-specific conservation measures are discussed in section 5.7.2.

5.7.2 Site-specific Impact and Mitigation

5.7.2.1 Federally Listed or Proposed Listed Species

Based on consultations with the Arizona and Carlsbad Field Offices of the FWS, 11 federally listed or proposed listed threatened or endangered species were identified as potentially occurring in the project

area. Because the desert pupfish is only known from sites well away from areas that would be impacted by the North Baja Pipeline Project and the brown pelican would only be a very rare migrant, we have determined that there would be *no effect* on these two species. We have determined that the North Baja Pipeline Project *may affect* the remaining nine species that are known or suspected to occur in the project area. Presented below is a discussion of potential impacts and the conservation measures that would be used to avoid or minimize impacts on these nine species.

Bald Eagle

NBP identified potential habitat for the bald eagle from MPs 0.0 to 12.0 and MPs 26.0 to 33.0. However, bald eagles were not observed during surveys of project areas nor did cottonwood trees or utility poles present in areas of potential habitat show evidence of eagle habitation. The dominant crown class trees found in the vicinity of the pipeline route appear to be too small and lack appropriate structure to entice bald eagles to roost or forage along the portion of the Colorado River in the project area. Based on this and the migratory nature of bald eagles potentially occurring in the project area, we have determined that construction and operation of the North Baja Pipeline Project would *not likely adversely affect* the bald eagle.

Mountain Plover

Potential habitat for wintering or transient mountain plovers can be found in the agricultural areas crossed or located near the pipeline route from MPs 0.0 to 12.0 and from MPs 22.0 to 26.0. Mountain plovers were not observed in the project area during 2001 surveys (Foster Wheeler Environmental Corporation, 2001a). However, because of the transient nature of wintering plovers and because they prefer freshly plowed, burned, or harvested agricultural fields, mountain plovers could be found in the area before or during construction of the project. If mountain plovers are present during construction, noise and construction activities would likely push plovers into similar adjacent habitat further away from the construction right-of-way. Mountain plovers would likely return to habitat in the immediate vicinity of the right-of-way after construction is complete. Consequently, we have determined that construction and operation of the North Baja Pipeline Project would *not likely jeopardize* the mountain plover.

Southwestern Willow Flycatcher

Potential habitat for the southwestern willow flycatcher is present within riparian areas adjacent to the pipeline route at the Colorado River crossing (MPs 0.0 to 3.0) and near the Ehrenberg Compressor Station site (MP 0.0). The use of the directional drill crossing method during installation of the pipeline would avoid any direct disturbances to the southwestern willow flycatcher or its habitat along the Colorado River (see section 2.3.2). If birds are present during the breeding season (April through mid September), the noise from construction of the pipeline or the Ehrenberg Compressor Station could indirectly affect southwestern willow flycatchers. Birds disturbed by construction of the project would most likely be displaced into adjacent habitats, potentially disrupting breeding activities (and annual production) for one season. Noise and activity from the operation of the Ehrenberg Compressor Station could indirectly affect the use of nearby habitats by southwestern willow flycatchers.

NBP would minimize the potential for impacts on the southwestern willow flycatcher by implementing the following measures:

- All southwestern willow flycatcher native habitat would be avoided by adopted construction methods.

- NBP has moved the compressor station planned location away from the Colorado River so that all construction and operation would be more than 1,000 feet from potential habitat. In addition, the directional drill rig would be located on the west side of the river more than 1,000 feet from the potential habitat on the eastern shore.
- The remaining construction site within 1,000 feet of potential native habitat is the exit site for the directional drill, an area that would experience active construction for several weeks. All work at this site during the period of April 1 to September 15 would limit noise, dust, nighttime lighting, and human presence to the greatest extent feasible.
- Dust, nighttime lighting, and human presence would be limited at the Colorado River crossing and the compressor station within 1,000 feet of potential habitat as follows:
 - a. When nighttime operations are required for the pullback of the pipe through the bored hole under the river, all work would be conducted behind abatement walls that would control noise and light emissions. These abatement walls would be installed prior to construction regardless of the time of start of construction.
 - b. No night lighting used within 1,000 feet of potential habitat during the breeding season would be directly visible at the edge of the habitat.
 - c. Noise levels of construction would be controlled. Noise levels would be measured at the edge of potential habitat and results provided to the FWS to verify baseline conditions and conditions during construction activities. Noise levels would be kept at or below an L_{dn} of 60 dBA. If the current ambient noise level exceeds an L_{dn} of 60 dBA, noise levels generated from construction activities would not exceed existing conditions.
 - d. There would be no construction-related pedestrian access to any riparian habitat during breeding season except in case of emergency frac-out response and to monitor the location of the directional drill (appendix D).
 - e. Dust would be strictly controlled by watering construction areas within 1,000 feet of potential habitat.
- Construction or installation work performed within 1,000 feet of potential habitat for the southwestern willow flycatcher at the Colorado River crossing during the period of April 1 to September 15 would be monitored daily by a qualified biologist. Monthly monitoring letter reports of construction activities and their effects on biological resources would be provided to the BLM, the CDFG, and the FWS.

In addition to habitats along the Colorado River, southwestern willow flycatchers may be found within monotypic tamarisk stands along the proposed route near the Cibola NWR and along several route variations under consideration in the Cibola NWR (see section 6.2.1). Some of these stands would be temporarily disturbed by construction, although tamarisk reproductive rates in these areas is very high. No minimization measures for temporary disturbance of invasive exotic habitat are proposed at this time.

Because habitat for the southwestern willow flycatcher is found in the project area, we recognize that the project may affect this species. Nevertheless, project construction would not directly disturb areas of native habitat. With the implementation of NBP's proposed conservation measures, we have determined that construction and operation of the North Baja Pipeline Project would *not likely adversely affect* the southwestern willow flycatcher.

Yuma Clapper Rail

Potential habitat for the Yuma clapper rail is present in some areas of wetland vegetation along the pipeline route (MPs 0.0 to 12.0 and MPs 31.0 to 33.0) including the Colorado River crossing (MPs 0.0 to 3.0) and near the Ehrenberg Compressor Station site (MP 0.0). The use of the directional drill crossing method during installation of the pipeline would avoid any direct disturbances to the Yuma clapper rail or its habitat along the Colorado River (see section 2.3.2). The open-cut crossing of Rannells Drain (MP 11.4) would directly affect about 0.04 acre of potential Yuma clapper rail habitat. If birds are present during the breeding season (February through August), the noise from construction of the pipeline or the Ehrenberg Compressor Station could indirectly affect Yuma clapper rails. Birds disturbed by construction of the project would most likely be displaced into adjacent habitats, potentially disrupting breeding activities (and annual production) for one season. Noise and activity from the operation of the Ehrenberg Compressor Station could indirectly affect the use of nearby habitats by the Yuma clapper rail.

NBP would minimize the potential for impacts on the Yuma clapper rail by implementing the following measures:

- All Yuma clapper rail habitat would be avoided by adopted construction methods, except for Rannells Drain (MP 11.4).
- Although there is no evidence that construction of this nature may have an adverse indirect impact on rails, the mitigation measures proposed for the southwestern willow flycatcher at the Colorado River crossing (e.g., moving the compressor station further from potential habitat and the abatement walls to be installed prior to construction) would also protect the Yuma clapper rail from any adverse impact.
- At Rannells Drain, mechanical bird exclusion fencing would be installed over the habitat prior to February 1 across the entire construction area, including the needed temporary extra workspaces for the open-cut trenching of the drain. This fencing would be of sturdy construction material and of fine enough mesh to exclude Yuma clapper rails from the immediate construction work area until construction is completed to avoid direct impact on birds. NBP would maintain the bird exclusion fencing until construction starts in the habitat itself.
- Construction or installation work performed within 1,000 feet of potential habitat for the Yuma clapper rail during the period of February 1 to August 30 would be monitored daily by a qualified biologist. Monthly monitoring letter reports of construction activities and their effects on biological resources would be provided to the BLM, the CDFG, and the FWS.

Because potential habitat for the Yuma clapper rail is found in the project area, we recognize that the project may affect this species. Nevertheless, with the implementation of NBP's proposed conservation measures, we have determined that construction and operation of the North Baja Pipeline Project would *not likely adversely affect* the Yuma clapper rail.

Desert Tortoise

The pipeline route crosses desert tortoise habitat between MPs 16.0 and 75.2. About 236.4 acres of FWS-designated critical habitat, part of the Chuckwalla Unit, would be disturbed by construction activities.

Within the areas along the pipeline route identified as desert tortoise habitat, NBP identified 110.5 acres of BLM Category I and 116.1 acres of BLM Category II lands that would be disturbed by pipeline construction. Construction of the project would affect another 374.5 acres of suitable desert tortoise habitat that is not classified by the BLM (BLM and CDFG, 2001).

In addition to the effects of construction on potential habitat, construction-related impacts on the desert tortoise could include direct mortality or injury as a result of being crushed by vehicles, movement of soil, and entrapment in burrows or open trenches. During surveys of the pipeline route, desert tortoises and desert tortoise sign (*e.g.*, scat, tracks, burrows) were observed at many locations along the pipeline route (see section 4.7.1). Desert tortoise and desert tortoise sign were particularly abundant between MPs 36.0 and 66.0.

To compensate for desert tortoise habitat affected during construction, NBP would implement the following measures:

- Impacts on desert tortoise habitat would be offset through either an acceptable land acquisition or an assessed financial contribution. Compensation rates would be determined based on the area disturbed in the BLM land categories.
- NBP would provide funding to the CDFG to manage acquired lands in addition to an enhancement fee.

Additionally, NBP would minimize the potential for impacts on the desert tortoise by implementing the following measures:

- NBP would submit the names, permit numbers, and relevant tortoise experience resumes of all individuals who might need to handle desert tortoises to the FWS for approval at least 15 days prior to the initiation of clearance surveys. Project activities would not begin until an authorized biologist has been approved. While other biologists may be employed as monitors, only those approved by the FWS would be permitted to handle tortoises.
- The FWS would provide the names of all authorized biologists to the BLM for its records.
- All persons authorized by the FWS to handle desert tortoises would follow the guidelines established in the *Guidelines for Handling Desert Tortoises During Construction Projects* (Desert Tortoise Council 1994, revised 1999).
- A clearance survey for the desert tortoise would be conducted by an authorized biologist within 24 hours prior to ground disturbance.
- Burrows outside of the limits of the construction right-of-way would be flagged so that the biological monitor would be able to more easily locate them during construction.
- All desert tortoise burrows or pallets in the construction area would be excavated by a qualified biologist. All desert tortoise handling and burrow excavation would be in accordance with handling procedures developed by the FWS and conducted by qualified desert tortoise biologists.

- Desert tortoises that are found above ground and need to be moved from harm's way would be placed by the authorized biologist in the shade of a shrub. All desert tortoises removed from burrows would be placed in an unoccupied burrow of approximately the same size as the one from which it was removed.
- If an existing burrow is unavailable, the authorized biologist would construct or direct the construction of a burrow of similar shape, size, depth, and orientation as the original burrow. Desert tortoises moved during inactive periods would be monitored for at least 2 days after placement in the new burrows to ensure their safety. The authorized biologist would be allowed some judgment and discretion to ensure that survival of the desert tortoise is likely.
- Should a tortoise wander into the construction area during construction, adjacent activities would be halted until the tortoise has been moved out of the construction work area out of harm's way.
- If a tortoise is located in the construction work area and is not moving, adjacent activities would be halted until an authorized biologist is able to move it out of harm's way.
- All pipeline marker signs within desert tortoise habitat would be fitted with "bird-be-gone" or similar bird repellent devices.
- Only approved access roads would be used. Only approved areas would be used for temporary storage areas, laydown sites, and any other surface-disturbing activities. Any routes of travel that require construction or modification, or any additional work areas, would be surveyed for tortoises by a qualified biologist(s) prior to modification or construction of the route or construction or use of a new work area.
- Trench segments or other excavations would be provided with tortoise escape ramps. All excavations would be inspected for tortoises three times daily and prior to backfilling.
- Any time a vehicle is parked, the ground around and under the vehicle would be inspected for desert tortoises before the vehicle is moved. If a desert tortoise is observed, it would be left to move on its own. If this does not occur within 15 minutes, an authorized biologist would remove and relocate the tortoise. Within desert tortoise habitat, construction pipe, culverts, or similar structures with a diameter of 3 inches or greater that are stored on the construction site for one or more nights would be inspected for tortoises before the material is moved, buried, or capped. As an alternative, all such structures may be capped before being stored on the construction site.
- All construction-related activities in desert tortoise habitat would be conducted from dawn until dusk.

Although NBP's proposed mitigation measures would reduce impacts on the desert tortoise, the quality of the habitat traversed by the proposed route, in addition to the established presence of the species as indicated by recent surveys, lead us to conclude that effects on the desert tortoise are not indiscernible or discountable. Therefore, we have determined that construction and operation of the North Baja Pipeline Project *is likely to adversely affect* the desert tortoise and its designated critical habitat. However, the proposed action as described would not make any irreversible or irretrievable commitments of resources that

would foreclose the formulation or implementation of any reasonable or prudent alternatives needed to avoid jeopardizing the continued existence of the species.

Bonytail Chub, Gila Topminnow, and Razorback Sucker

The bonytail chub, Gila topminnow, and razorback sucker all potentially inhabit the project area in the Colorado River. In fact, the FWS has designated the portion of the Colorado River crossed by the pipeline route as critical habitat for the razorback sucker. As currently proposed, NBP would install the pipeline under the Colorado River using the directional drill method. Unlike a conventional open-cut crossing, directional drilling would not alter or remove streambed or streambank habitat, cause in-stream sedimentation, or interfere with fish movement. Used successfully, this method would avoid effects on the bonytail chub, Gila topminnow, and razorback sucker. Additionally, NBP would withdraw water from the Colorado River for hydrostatic testing of the pipeline (see section 5.3.2.3). Because the intake piping would be screened to prevent fish entrainment, no fish would be impacted by hydrostatic test water withdrawal.

As described in section 5.3.2.2 and Part IV of the CM&R Plan (see appendix D), it is possible that geologic irregularities could be encountered during the crossing that could result in the inadvertent release of drilling mud during the drilling operation or the inability to complete the crossing using the directional drill method. Because geotechnical investigations at the Colorado River suggest the river is likely to be drilled successfully and other drilled crossings in the same general location have been successfully completed, we have determined that the bonytail chub, Gila topminnow, and razorback sucker would *not likely be adversely affected* by construction of the project. In the event that the directional drill of the Colorado River fails, NBP proposes to complete the crossing using an open-cut crossing technique. We have recommended that NBP not begin an open-cut crossing of the Colorado River until the staff has consulted with the FWS, the CDFG, and the ADGF (see section 5.3.2.2).

Peirson's Milkvetch

A preliminary habitat evaluation of the pipeline route identified potential habitat for the Peirson's milkvetch where the route passes near the eastern edge of the Algodones Dunes (MPs 72.0 to 79.8). However, botanists did not identify this species in areas that would be directly disturbed by construction during a species-specific survey conducted during April 2001. As discussed in section 5.13, it is possible that construction of the pipeline right-of-way in the vicinity of the Algodones Dunes could increase OHV traffic in areas where Peirson's milkvetch might occur. To protect known occurrences of Peirson's milkvetch, the BLM closed about 48,000 acres of suitable habitat in the Algodones Dunes to OHV traffic. Because of the lack of known occurrences in areas directly impacted by the project and existing protections to this species in the area, we have determined that the North Baja Pipeline Project would *not likely adversely affect* the Peirson's milkvetch.

5.7.2.2 State-Listed Endangered or Threatened Species

As discussed in section 4.7.2, 16 state-listed or proposed listed threatened or endangered species were identified as potentially occurring in the project area. Based on habitat evaluations and species-specific surveys, 12 of these 16 species could potentially be affected by the project. Seven of these species are also federally listed and are discussed in section 5.7.2.1. The remaining six species are discussed below.

Arizona Bell's Vireo

During a preliminary habitat evaluation of the pipeline route, NBP identified potential habitat for the Arizona Bell's vireo in association with the Colorado River near MPs 0.0 to 3.0 and MPs 31.0 to 33.0 (Davis Lake area). The use of the directional drill crossing method during installation of the pipeline across the Colorado River and implementation of NBP's general conservation measures (see section 5.7.1) as well as those specific measures proposed for southwestern willow flycatchers (see section 5.7.2.1) would serve to avoid or minimize potential impact on the Arizona Bell's vireo.

Black Rail

Potential habitat for the black rail is present in some areas of wetland vegetation along the pipeline route (MPs 0.0 to 12.0 and MPs 31.0 to 33.0) including the Colorado River crossing (MPs 0.0 to 3.0) and near the Ehrenberg Compressor Station site (MP 0.0). The use of the directional drill crossing method during installation of the pipeline would avoid any direct disturbances to the black rail or its habitat along the Colorado River (see section 2.3.2). The open-cut crossing of Rannells Drain (MP 11.4) would directly affect about 0.04 acre of potential black rail habitat. If birds are present during the breeding season (February through August), the noise from construction of the pipeline or the Ehrenberg Compressor Station could indirectly affect black rails. Birds disturbed by construction of the project would most likely be displaced into adjacent habitats, potentially disrupting breeding activities (and annual production) for one season. Noise and activity from the operation of the Ehrenberg Compressor Station could indirectly affect the use of nearby habitats by black rails. Conservation measures taken by NBP to minimize impact on the Yuma clapper rail would similarly minimize impact on the black rail (see section 5.7.2.1). Therefore, no additional measures are proposed.

Elf Owl, Gila Woodpecker, and Gilded Flicker

NBP reported that potential habitat for the elf owl, Gila woodpecker, and gilded flicker is found along the pipeline route at MPs 0.0 to 12.0 (elf owl and Gila woodpecker only), MPs 22.0 to 23.0, MPs 35.0 to 36.0, MPs 41.0 to 46.0, MPs 50.0 to 53.0, and MPs 59.0 to 66.0. If birds are present during the breeding season, the noise from construction of the project could indirectly affect these birds. Birds disturbed by construction of the project would most likely be displaced into adjacent habitats, potentially disrupting breeding activities (and annual production) for one season. Additionally, there would be a long-term loss of potential habitats found in desert wash woodlands. The use of the directional drill crossing method during installation of the pipeline across the Colorado River and implementation of NBP's general conservation measures (see section 5.7.1) as well as those specific measures proposed for southwestern willow flycatchers (see section 5.7.2.1) and LeConte's and Crissal thrashers (see section 5.7.2.3) would serve to avoid or minimize potential impact on the elf owl, Gila woodpecker, and gilded flicker.

Western Yellow-billed Cuckoo

Suitable habitat in the project area for the western yellow-billed cuckoo has been found in the Davis Lake area (MPs 31.0 to 33.0). To assess whether the western yellow-billed cuckoo occupies this area, biologists will follow current survey protocols and visit areas of potential habitats on three separate occasions during the summer of 2001. Implementation of NBP's general minimization and conservation measures would reduce potential impact on the western yellow-billed cuckoo (see section 5.7.1).

5.7.2.3 Other Special Status Species

As described in section 4.7.3, 39 special status species (not federally or state-listed or proposed listed endangered or threatened) were identified as potentially occurring in the project area. Based on habitat evaluations and species-specific surveys, 21 of these 39 species could potentially be affected by the project. A discussion of potential impacts and measures to avoid or minimize impacts on these species is presented below.

Bats

Potential foraging habitat for the California leaf-nosed bat, cave myotis, pale big-eared bat, pallid bat, and western mastiff bat would be disturbed during construction of the North Baja Pipeline Project. This impact would be mitigated through implementation of NBP's CM&R Plan and through compensation for disturbances to desert wash woodlands (see discussion for LeConte's thrasher and Crissal thrasher below and section 5.3.2.4). Available roost sites tend to be the most critical habitat feature limiting bat distribution (Humphrey and Kunz, 1976). Because roost sites, including caves, mines, and buildings, would not be impacted by the project, we believe that bats would not be significantly affected by construction or operation of the North Baja Pipeline Project.

Nelson's Bighorn Sheep

Nelson's bighorn sheep in the general vicinity of the project tend to occupy habitats found within the Palo Verde, Chocolate, and Cargo Muchacho Mountains, which are areas avoided by the pipeline route. The pipeline route does, however, cross corridors (MPs 34.0 to 38.0 and MPs 49.0 to 52.0) that can sometimes be used by bighorn sheep moving between areas of potential habitat. Although unlikely, movements of bighorn sheep through these corridors could be temporarily disrupted during construction of the project.

Black-tailed Gnatcatcher and Cliff Swallow

The black-tailed gnatcatcher occurs commonly in desert wash woodlands in the project area, particularly at those sites with dense palo verde, ironwood, or acacia. The cliff swallow is a common to abundant spring migrant found throughout California in open habitats such as meadows, grasslands, shrublands, pastures, croplands, or areas with open bodies of water. Although biologists noted the presence of high quality cliff swallow nesting habitat near the pipeline route in areas with canals and drains in the agricultural areas of Blythe and Palo Verde, no active nests were found within areas that would be impacted by construction. Implementation of NBP's general conservation measures (see section 5.7.1) as well as those specific measures proposed for LeConte's thrasher and Crissal thrasher (see discussion below) would serve to avoid or minimize potential impact on the black-tailed gnatcatcher and cliff swallow.

Burrowing Owl

Favorable burrowing owl habitat includes areas with low growing vegetation and small mammal burrows or culverts. These characteristics are relatively abundant throughout much of the project area. Potential habitat for the burrowing owl is present in or adjacent to areas that would be disturbed by pipeline construction from MPs 0.0 to 12.0, MPs 22.0 to 26.0, MPs 31.0 to 33.0, and MPs 79.0 to 79.8 and near the Ehrenberg Compressor Station site (MP 0.0). Pipeline construction would directly affect about 25.1 acres of potential owl habitat. During 2001 surveys, biologists identified two active burrows in irrigation canals adjacent to agricultural fields at MP 10.5 and two active burrows near I-8 at MP 75.3 (Foster Wheeler Environmental Corporation, 2001b).

If burrowing owls are present during the breeding season (February 1 to August 31), the noise from construction of the pipeline or construction and operation of the Ehrenberg Compressor Station could indirectly affect burrowing owls. Birds disturbed by construction of the project would most likely be displaced into adjacent habitats, potentially disrupting breeding activities (and annual production) for one season. Noise and activity from the operation of the Ehrenberg Compressor Station could indirectly affect the use of nearby habitats by burrowing owls.

NBP would minimize the potential for impacts on the burrowing owl by implementing the following measures:

- Direct impacts on burrowing owl habitat would be avoided by constructing in the road pavement along 18th Avenue or boring/drilling beneath habitat areas to the maximum extent feasible.
- Preconstruction surveys during the breeding season (February 1 to August 31) would be conducted by biologists who would visually check all potential habitat within 250 feet of both sides of the proposed construction work area.
- Preconstruction surveys during the wintering season (September 1 to January 31) would be conducted by visually checking all potential habitat in areas where there would be some ground disturbance, including vehicle access or trenching. Qualified biologists would conduct preconstruction surveys for burrowing owls within 2 weeks of construction activities.
- CDFG guidelines require that one-way doors be installed at least 48 hours before construction at all active burrows within the construction work area so that the burrows are not occupied during construction activities. The one-way doors would be installed at that time to ensure that the owls can get out of the burrows but cannot get back in. CDFG guidelines also require the installation of two artificial burrows for each occupied burrow that is removed. Artificial burrows would be constructed prior to installation of one-way doors. Installation of one-way doors and construction of artificial burrows would be conducted outside of the breeding season thus avoiding any potential to affect eggs or newly hatched owls.
- If any active burrows are damaged by construction activities, compensation would be paid at the equivalency rate of 6.5 acres of foraging habitat for burrowing owls for each active burrow damaged.

With implementation of NBP's general conservation measures (see section 5.7.1) as well as those specific measures proposed for burrowing owls, we believe that impacts on burrowing owl populations would be minimal.

LeConte's Thrasher and Crissal Thrasher

LeConte's thrasher and Crissal thrasher occupy habitat (*e.g.*, creosote scrub, desert riparian, desert wash woodlands) that is abundant throughout much of the project area. Potential habitat for these two species is present in or adjacent to areas that would be disturbed by pipeline construction (LeConte's thrasher: MPs 12.0 to 79.8; Crissal thrasher: MPs 0.0 to 3.0, MPs 24.0 to 29.0, and MPs 31.0 to 33.0). Potential habitat for Crissal thrasher is also present near the Ehrenberg Compressor Station site (MP 0.0). Construction would

directly affect about 662.3 acres of potential LeConte's thrasher habitat and about 11.2 acres of potential Crissal thrasher habitat. Because the habitat for these species would recover slowly after construction, these impacts would result in a long-term reduction in available habitats (see section 5.5.1). If birds are present during the breeding season (early February to June), the noise from construction could indirectly affect these birds. Birds disturbed by construction of the project would most likely be displaced into adjacent habitats, potentially disrupting breeding activities (and annual production) for one season. Noise and activity from the operation of the Ehrenberg Compressor Station could indirectly affect the use of nearby habitats by Crissal thrashers.

NBP would minimize the potential for impacts on the LeConte's thrasher and Crissal thrasher by implementing the following measures:

- Impacts on microphyll woodland habitat would be compensated through habitat acquisition (at a 3 to 1 ratio) approved by the FWS, the BLM, and the CDFG for those areas not already covered by desert tortoise habitat compensation (see section 5.7.2.1).
- The mitigation measures proposed for the southwestern willow flycatcher at the Colorado River crossing (*e.g.*, moving the compressor station further from potential habitat and the abatement walls to be installed prior to construction) would also protect the Crissal thrasher from any adverse impact.

With implementation of NBP's general conservation measures (see section 5.7.1) as well as those specific measures proposed for LeConte's thrasher and Crissal thrasher, we believe that impacts on thrasher populations would be minimal.

Great Egret

Potential habitat for the great egret is found from MPs 0.0 to 12.0, MPs 22.0 to 26.0, MPs 31.0 to 33.0, and MPs 79.0 to 79.8. If great egrets are present in the project area during construction, noise and construction activities would likely push egrets into similar adjacent habitat further away from the construction right-of-way. No nesting habitat would be disturbed by the project.

Sonoran Yellow Warbler and Vermilion Flycatcher

NBP identified potential habitat for the Sonoran yellow warbler and the vermilion flycatcher at several locations along the pipeline route. Of the habitats near the pipeline route, areas along the Colorado River are the most likely to be used by these species. The use of the directional drill crossing method during installation of the pipeline across the Colorado River and implementation of NBP's general conservation measures (see section 5.7.1) as well as those specific measures proposed for southwestern willow flycatchers (see section 5.7.2.1) and LeConte's and Crissal thrashers (discussed above) would serve to avoid or minimize potential impact on the Sonoran yellow warbler and vermilion flycatcher.

Couch's Spadefoot Toad

The Couch's spadefoot toad historically occupied habitat in the general vicinity of the pipeline route (based on the sensitive nature of this species and on request from the CDFG, specific locations of known occurrences are not provided in this document). Construction of the pipeline project in areas of occupied habitat could result in mortality or injury to individual Couch's spadefoot toads due to entrapment in open trenches or as result of being crushed by vehicles and displaced soil. Construction disturbances to rain pools

or temporary overflow areas could disrupt breeding activities (and annual production) for one season, potentially significantly affecting local populations of Couch's spadefoot toad. To address this issue, NBP proposes the following conservation measures:

- If there are local thunderstorms that provide substantial moisture under warm conditions (temperatures over 90 degrees Fahrenheit) in July, August, or September of 2001 and in 2002, and if construction has not already been completed in that area, NBP would examine potential Couch's spadefoot toad habitat for persistent pools. The CDFG would notify NBP if appropriate conditions prevail and NBP would coordinate with the CDFG to complete surveys.
- Qualified biologists would monitor temporary pools for persistence and would examine them daily for eggs, tadpoles, or toadlets.
- Construction activities would not be conducted within 150 feet of temporary pools. If water fails to persist within shallow pools for 10 days, or if no Couch's spadefoot toad eggs, tadpoles, or toadlets are found within 10 days, then construction would resume in the area.
- If any toads are found, the CDFG would be immediately notified. A report on the findings would be submitted to the CDFG within 30 days of completion of construction activities within the area.

With implementation of NBP's general conservation measures (see section 5.7.1) as well as those specific measures proposed for Couch's spadefoot toad, we believe that impacts on Couch's spadefoot toad populations would be minimal.

Colorado Desert Fringe-toed Lizard, Flat-tailed Horned Lizard, and Mojave Fringe-toed Lizard

Based on a preliminary habitat evaluation, NBP identified about 8.8 miles of the pipeline route (MPs 71.0 to 79.8) as potential habitat for the Colorado Desert fringe-toed lizard (CFTL) and the flat-tailed horned lizard (FTHL). A more refined habitat evaluation conducted during 2001 indicated that this 8.8-mile-long portion of the pipeline route includes 0.4 mile of favorable habitat, 4.1 miles of transitional habitat, and 4.3 miles of unfavorable habitat. The pipeline route is over 4 miles to the east of the nearest established FTHL management area (East Mesa Management Area). The Mojave fringe-toed lizard (MFTL) potentially occurs in areas of suitable habitat crossed by the pipeline route on the Palo Verde Mesa between MPs 11.6 and 22.0 (BLM and CDFG, 2001).

Construction of the pipeline through habitat occupied by the CFTL, FTHL, and MFTL could result in direct mortality or injury of individual lizards as a result of being crushed by vehicles, movement of soil, and entrapment in open trenches. The noise and activity of construction could also indirectly impact lizards by pushing them into similar adjacent habitat further away from the construction right-of-way. We expect that these lizards would likely return to the habitat in the immediate vicinity of the right-of-way after construction is completed.

To minimize potential adverse impacts on the CFTL/FTHL/MFTL, NBP proposes to implement the following mitigation measures:

- Qualified biologists would conduct preconstruction surveys to identify all potential habitat along the construction area. Within 7 days before construction begins, biologists would identify habitat areas subject to direct construction-related ground disturbance.
- Biologists would conduct a final clearance survey 1 to 2 days prior to construction activities, excavate potential burrows, and relocate the lizards to nearby suitable habitat. The management strategy guidelines for relocation of FTHL described in the *Flat-tailed Horned Lizard Rangewide Management Strategy* (Foreman, 1997) would be used for all three species.
- A field contact representative would have the authority to ensure compliance with protective measures for these lizards, and would initiate a worker education program.
- A biological monitor would be present in each area of active construction within CFTL/FTHL/MFTL habitat throughout the work day from initial clearing through habitat restoration. The biological monitors would have sufficient education, field experience, and training with these lizards to understand their biology and behavior. The monitors would ensure that all activities are in compliance with the management strategy guidelines for relocation of FTHL described in the *Flat-tailed Horned Lizard Rangewide Management Strategy* (Foreman, 1997). The biological monitors would have the authority and responsibility to halt activities that are in violation of the management strategy guidelines. The monitors would:
 - a. examine the construction area periodically (at least hourly when surface temperatures exceed 86 degrees Fahrenheit) for the presence of CFTL/FTHL/MFTL. In addition, all hazardous sites (open pipes, trenches, holes, or deep excavations) would be inspected for the presence of lizards prior to backfilling;
 - b. work with the construction supervisor to take steps, as necessary, to avoid disturbance to CFTL/FTHL/MFTL and their habitat. If avoiding disturbance is not possible or if lizards are found trapped in an excavation, the biological monitor would capture by hand and relocate the affected lizard;
 - c. place relocated lizards in the shade of a large shrub a short distance from the construction right-of-way and in the direction of undisturbed habitat. If the surface temperature in the sun is less than 86 degrees Fahrenheit, or greater than 122 degrees Fahrenheit, the biological monitor authorized to handle the lizard would hold the lizard for later release; and
 - d. hold initially captured CFTL/FTHL/MFTL in a cloth bag, cooler, or other appropriate clean, dry container from which the lizard cannot escape. Lizards would be held at temperatures between 77 and 95 degrees Fahrenheit and would not be exposed to direct sunlight. Release would occur as soon as possible after capture and during daylight hours when surface temperatures range from 90 to 104 degrees Fahrenheit.

With implementation of NBP's general conservation measures (see section 5.7.1) as well as those specific measures proposed for CFTL/FTHL/MFTL, we believe that impacts on these lizard populations would be minimal.

Desert Unicorn-Plant, Fairyduster, and Spiny Abrojo

Based on botanical surveys of the pipeline route conducted during 2000 and 2001, NBP counted 5 desert unicorn-plants along the pipeline route in desert wash woodland and sandy substrate creosote bush scrub habitats from MPs 23.4 to 32.1 and about 61 desert unicorn-plants at several locations in areas of deep sand substrate within creosote bush scrub habitat from MPs 75.0 to 78.8. These same surveys identified 2,330 individual fairyduster plants at a series of locations (MPs 45.1 to 49.8, MPs 53.6 to 57.4, and MPs 65.1 to 66.6) and 10 individual spiny abrojo plants in desert wash woodland communities from MPs 45.1 to 46.5 (Foster Wheeler Environmental Corporation, 2001c). Although pipeline construction activities (e.g., clearing, grading, trenching, backfilling, and excavation) would directly impact plants found within the construction right-of-way, the loss of individual plants is not anticipated to impact the local or regional populations of these species because of the abundance of the species (Sebesta, 2001). For the most part, construction would only temporarily affect suitable habitat for the desert unicorn-plant, fairyduster, and spiny abrojo. Restoration of the pipeline right-of-way would allow native plants to reestablish in areas disturbed by construction. The BLM botanist has indicated that the desert unicorn-plant responds to disturbance and might be helped by construction of the pipeline (Sebesta, 2001). Furthermore, the BLM botanist indicated that transplanting these species to a location outside the construction work area would not likely be successful and was not recommended (Sebesta, 2001). Although efforts would be made to minimize the spread of non-native species, construction could indirectly affect some native plants through the introduction of noxious weeds into disturbed areas.

5.7.3 Cumulative Impacts

Section 7 of the ESA requires the Federal action agency to provide an analysis of cumulative effects when requesting initiation of formal consultation. Under the ESA, cumulative effects include the effects of future state, tribal, local, or private actions that are reasonably certain to occur in the action area. Future Federal actions that are unrelated to the proposed action are not considered because they would require separate consultation pursuant to Section 7 of the ESA.

Cumulative impacts can result from individually minor, but collectively significant, actions taking place over a period of time. Several other existing or planned activities in the general vicinity of the North Baja Pipeline Project could have a cumulative impact with NBP's proposed project. Table 5.13.1-1 of this draft EIS/EIR lists the projects we are aware of through our scoping and NBP's research. In general, the projects listed that have a potential impact on wildlife and vegetation are those most likely to have a cumulative impact on listed species.

In particular, whenever a linear corridor is opened in an area where off-road recreation is popular, it is possible that the corridor could be used for travel or access to other areas by recreationists. Consequently, there could be an increase in off-road activity that contributes to habitat loss or degradation, resulting in increased effects on listed species in the area. We cannot speculate on potential acreage affected or the extent to which any given species would be affected by the projects listed in table 5.13.1-1 since we have no control over actual routes, facilities, or project feasibility. However, we do not anticipate that the North Baja Pipeline Project, considered together with other non-Federal actions, would appreciably reduce the likelihood of survival and recovery of the species in question for this BA/draft EIS/EIR, for the following reasons:

- NBP has proposed to construct within or adjacent to existing rights-of-way to the maximum extent practicable. Of the 79.9 miles of proposed pipeline, only about 15.6 miles (19 percent) would be constructed on newly created right-of-way that does not parallel existing rights-of-way and is not within a BLM-designated utility corridor.
- Effects of NBP's project on listed species habitats would be minimized through revegetation and restoration efforts.
- Implementation of NBP's proposed species-specific mitigation measures (including off-site compensatory mitigation for the desert tortoise) and our recommendations would reduce the potential effects on listed species.
- Compensatory off-site mitigation would also likely be required, where applicable, for the projects listed in table 5.13.1-1 to offset interim losses in habitat function for the desert tortoise and possibly other listed species.

5.7.4 Conclusion

NBP, acting as the FERC's non-Federal representative for purposes of complying with Section 7 of the ESA, informally consulted with the FWS regarding the presence of federally listed or proposed listed species in the project area. Based on these consultations, NBP determined that 11 federally listed or proposed listed threatened or endangered species potentially occur in the general vicinity of or within the counties crossed by the project. After further consultations with the FWS, the BLM, and the CDFG, NBP conducted surveys of the pipeline route during 2000 and again during the spring and summer of 2001 to identify the presence of listed species in the project area. After completing the field surveys, NBP prepared survey reports, as well as mitigation and conservation plans, and submitted them to the FERC, the BLM, the FWS, and the CSLC. Surveys for the southwestern willow flycatcher were not completed at the time of printing this document. NBP indicated it would file a report of the results of the southwestern willow flycatcher survey with the FERC and the FWS. In summary, our determinations of effect for federally listed or proposed listed endangered or threatened species include:

- No effect: desert pupfish, brown pelican;
- Not likely to adversely affect: bald eagle, southwestern willow flycatcher, Yuma clapper rail, bonytail chub, Gila topminnow, razorback sucker, and Peirson's milkvetch;
- Likely to adversely affect: desert tortoise; and
- Not likely to jeopardize: mountain plover.

As required by the CESA, we have consulted with the CDFG to determine the proposed project's effect on California-listed or proposed listed species. As described above, it is expected that the North Baja Pipeline Project would avoid adverse impacts on the following California-listed threatened or endangered species: Arizona Bell's vireo, black rail, elf owl, Gila woodpecker, gilded flicker, and western yellow-billed cuckoo. In addition, the Federal and California-listed threatened desert tortoise would likely be adversely affected by construction of the project. Because this species is California-listed as well as federally listed, the CDFG would review the BO prepared by the FWS and consider the issuance of a consistency determination pursuant to section 2080.1 of the California Fish and Game Code.

As discussed in section 4.7, Arizona does not have an endangered species law that is equivalent to the ESA or CESA. Nevertheless, ADGF policy and a native plant law provide protection for some rare species in Arizona.

To ensure compliance with the ESA and the CESA as well as address ADGF concerns regarding rare species in Arizona, **we recommend that:**

- **NBP not begin construction activities until:**
 - a. **NBP completes all required species-specific surveys and the FERC and the CSLC receive comments from the FWS and the CDFG regarding the preconstruction survey reports;**
 - b. **the FERC completes formal consultation with the FWS;**
 - c. **the CDFG makes a consistency determination on the BO pursuant to Section 2080.1 of the California Fish and Game Code;**
 - d. **NBP has completed and filed with the FERC the results of consultations with the ADGF regarding measures to avoid or minimize impacts on special status species in Arizona; and**
 - e. **NBP has received written notification from the Director of OEP that construction or mitigation may begin.**

5.8 LAND USE, TRANSPORTATION, SPECIAL MANAGEMENT AREAS, RECREATION AND PUBLIC INTEREST AREAS, AND VISUAL RESOURCES

5.8.1 Land Use

5.8.1.1 General Impact and Mitigation

Land use impacts associated with the proposed 79.9 miles of new pipeline would include disturbance of existing land uses within the construction right-of-way during construction and retention of a new permanent right-of-way for operation of the pipeline. For the majority of the pipeline route, NBP proposes to use an 80-foot-wide construction right-of-way, of which 50 feet would be retained as permanent right-of-way. However, where the pipeline would be installed within or adjacent to the paved portion of 18th Avenue, NBP would use a 60-foot-wide construction right-of-way, of which 5 feet would be retained as permanent right-of-way.

In addition to the construction right-of-way, various temporary extra workspace areas would be needed. Temporary extra workspaces would be needed near the crossing locations of waterbodies, roads, and railroads, and near the beginning and end of the mainline construction spread for mobilization and demobilization. NBP would access the pipeline during construction using primarily existing dirt road and/or jeep trails that would be graded or otherwise improved as needed to move equipment and materials to the construction right-of-way. Approximately 0.4 mile of new temporary access roads would be constructed for the project, of which 0.02 would be permanent (see table C-2 in appendix C). NBP would also lease contractor yards for the storage of construction equipment, vehicles, fuel, office trailers, and materials. Yards would be located in previously disturbed industrial/commercial land or open land (desert). NBP has identified three contractor yards that would be used for construction.

Following construction, all land used for temporary construction right-of-way and temporary extra workspace areas would be allowed to revert to prior uses. With the exception of tree crops such as orchards, all forms of agriculture would be permitted within the permanent right-of-way. Construction of aboveground structures would be prohibited on the permanent right-of-way; however, no restriction would be placed on the temporary right-of-way or extra workspaces.

Land used for the aboveground facilities would be permanently converted to utility use. The Ehrenberg Compressor Station, Ehrenberg Meter Station, one pig launcher, and one MLV would be constructed in an agricultural area adjacent to existing industrial facilities on land zoned for light industrial use. The Rannells Trap and one MLV would permanently convert open land (desert) to industrial/commercial land. Open land (desert) would also be converted to industrial/commercial use for the Ogilby Meter Station, one pig receiver, and one MLV. Visual intrusion could occur during both construction and operation (see section 5.8.6). The other four MLVs would be located within the permanent right-of-way at the required intervals along the proposed route. No additional land would be required for the operation of the MLVs.

An easement would be used to convey both temporary (for construction) and permanent rights-of-way to the pipeline company. The easement gives the company the right to construct, operate, and maintain the pipeline, and establish a permanent right-of-way. In return, the company compensates the landowner for use of the land. The easement agreement between the company and landowner typically specifies compensation for loss of use during construction, loss of nonrenewable or other resources, damage to property during construction, and allowable uses of the permanent right-of-way after construction.

If an easement cannot be negotiated with a private landowner and the project has been certificated by the FERC, the company may use the right of eminent domain granted to it under Section 7(h) of the NGA and the procedure set forth under the Federal Rules of Civil Procedure (Rule 71A) to obtain the right-of-way and extra workspace areas. The company would still be required to compensate the landowner for the right-of-way and for any damages incurred during construction. However, the level of compensation would be determined by a court according to state law once NBP is issued a Certificate. In either case, NBP would compensate landowners for use of the land. Eminent domain does not apply to lands under Federal ownership (e.g., BLM land). We received a comment letter from the Arizona State Land Department stating that eminent domain does not apply to lands owned by the State of Arizona.

5.8.1.2 Site-specific Impact and Mitigation

Construction of NBP's pipeline and aboveground facilities would affect about 959.6 acres of land including temporary extra workspace, access roads, contractor yards, and aboveground facilities. During construction, about 757.2 acres of land would be disturbed for the construction right-of-way of the interconnect and mainline pipelines, 48.9 acres for temporary extra workspace, 89.5 acres for access roads, 50.4 acres for contractor yards, and about 13.6 acres of land for the aboveground facilities. Table 5.8.1-1 summarizes the acres of each type of land that would be affected by the project.

Open land (desert) would be the primary land use affected during construction of the pipeline, totaling about 773.2 acres or 81 percent of the total land affected by the project. The remaining land uses that would be disturbed consist of 7 percent (69.8 acres) of transportation use, 7 percent (68.7 acres) of agricultural land, 5 percent (45.4 acres) of industrial/commercial land, and < 1 percent (2.5 acres) of open water.

Of the total acreage affected by construction of the North Baja Pipeline Project, about 454.6 acres would be retained as new permanent right-of-way and aboveground facility sites. Of this 454.6 acres, 413.7 acres are open land (desert), 25.7 acres are agricultural land, 13.7 acres are transportation use, and 1.5 acres are open water. With the exception of the sites for the aboveground facilities, the land retained as permanent right-of-way would be allowed to revert to former use with a few restrictions (see section 5.8.1.1).

TABLE 5.8.1-1

Acres of Land Affected by Construction and Operation of the North Baja Pipeline Project

County, State	Agriculture <u>a/</u>		Transportation <u>b/</u>		Industrial/ Commercial <u>c/</u>		Open Land (Desert) <u>d/</u>		Open Water <u>e/</u>		Total	
	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.
La Paz County, Arizona												
Interconnect Pipeline	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.6	0.0	0.0	1.0	0.6
Mainline Pipeline <u>f/</u>	1.0	0.6	0.0	0.0	0.0	0.0	0.5	0.3	0.5	0.3	2.0	1.2
Temporary Extra Workspace	11.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.2	0.0
Access Roads <u>g/</u>	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.9	0.0
Contractor Yards	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aboveground Facilities	12.4	12.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.4	12.4
Subtotal	24.6	13.0	0.0	0.0	0.0	0.0	2.4	0.9	0.5	0.3	27.5	14.2
Riverside County, California												
Mainline Pipeline <u>f/</u>	20.4	12.7	69.8	13.7	0.0	0.0	104.7	65.5	1.0	0.6	195.9	92.5
Temporary Extra Workspace	23.7	0.0	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.0	24.9	0.0
Access Roads <u>g/</u>	0.0	0.0	0.0	0.0	0.0	0.0	33.7	0.0	0.0	0.0	33.7	0.0
Contractor Yards	0.0	0.0	0.0	0.0	45.4	0.0	0.0	0.0	0.0	0.0	45.4	0.0
Aboveground Facilities	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.0	0.0	0.3	0.3
Subtotal	44.1	12.7	69.8	13.7	45.4	0.0	139.9	65.8	1.0	0.6	300.2	92.8
Imperial County, California												
Mainline Pipeline <u>f/</u>	0.0	0.0	0.0	0.0	0.0	0.0	557.3	346.1	1.0	0.6	558.3	346.7
Temporary Extra Workspace	0.0	0.0	0.0	0.0	0.0	0.0	12.8	0.0	0.0	0.0	12.8	0.0
Access Roads <u>g/</u>	0.0	0.0	0.0	0.0	0.0	0.0	54.9	0.0	0.0	0.0	54.9	0.0
Contractor Yards	0.0	0.0	0.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0	5.0	0.0
Aboveground Facilities	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.9	0.0	0.0	0.9	0.9
Subtotal	0.0	0.0	0.0	0.0	0.0	0.0	630.9	347.0	1.0	0.6	631.9	347.6
Project Totals												
Interconnect Pipeline	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.6	0.0	0.0	1.0	0.6
Mainline Pipeline <u>f/</u>	21.4	13.3	69.8	13.7	0.0	0.0	662.5	411.9	2.5	1.5	756.2	440.4
Temporary Extra Workspace	34.9	0.0	0.0	0.0	0.0	0.0	14.0	0.0	0.0	0.0	48.9	0.0
Access Roads <u>g/</u>	0.0	0.0	0.0	0.0	0.0	0.0	89.5	0.0	0.0	0.0	89.5	0.0
Contractor Yards	0.0	0.0	0.0	0.0	45.4	0.0	5.0	0.0	0.0	0.0	50.4	0.0
Aboveground Facilities	12.4	12.4	0.0	0.0	0.0	0.0	1.2	1.2	0.0	0.0	13.6	13.6
TOTAL	68.7	25.7	69.8	13.7	45.4	0.0	773.2	413.7	2.5	1.5	959.6	454.6

TABLE 5.8.1-1 (cont'd)

Acres of Land Affected by Construction and Operation of the North Baja Pipeline Project

County, State	Agriculture <u>a/</u>		Transportation <u>b/</u>		Industrial/ Commercial <u>c/</u>		Open Land (Desert) <u>d/</u>		Open Water <u>e/</u>		Total	
Facility	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.

a/ Agricultural land includes cropland typically comprising alfalfa, wheat, cotton, and irrigated pasture, and to a lesser extent, melons, lettuce, and broccoli.

b/ Transportation includes the installation of the proposed pipeline within the 18th Avenue easement (paved and unpaved portions).

c/ Industrial/commercial land includes open land comprising either currently or formerly used industrial or commercial areas.

d/ Open land (desert) consists of undeveloped, desert scrub-shrub lands.

e/ Open water includes the crossing of open expanses of water such as at the Colorado River and the All American Canal.

f/ Based on an 80-foot-wide construction right-of-way and a 50-foot-wide permanent right-of-way in all areas except along 18th Avenue. Based on a 60-foot-wide construction right-of-way and a 5-foot-wide permanent right-of-way along 18th Avenue. The operation total reflects a 10-foot-wide maintained area in wetlands.

g/ Access roads are assumed to be 22 feet wide.

5.8.2 Existing and Planned Residential Areas

5.8.2.1 General Impact and Mitigation

Two residential impacts associated with construction and operation of a pipeline would be the disturbance of residential property during construction and the encumbrance of the permanent right-of-way on future development (*i.e.*, its limitation on future permanent structures within the permanent right-of-way). Residences and businesses adjacent to the construction right-of-way would be most likely to experience the effects of construction and operation of the project. The only residences and businesses identified adjacent to NBP's pipeline route are along 18th Avenue in Riverside County, California. Within this area, there are 25 nearby residences and businesses, including 18 residences and 2 businesses located within 100 feet of the construction work area. The two businesses and four of the residences would be located within 50 feet of the construction work area.

Temporary impact during construction of the pipeline facilities in residential areas could include: inconvenience caused by noise and dust generated by construction equipment traffic, and by trenching of roads or driveways; increased localized traffic; ground disturbance of lawns; removal of trees, landscape shrubs, or other vegetative screening between residences and adjacent rights-of-way; and potential damage to existing septic systems or wells. During typical overland pipeline construction, the trench can be excavated before the pipe is strung or welded. This could result in open trenches for extended periods of time, which can pose a safety hazard to nearby residents. Impacts on residential areas can be reduced by locating the pipeline at a greater distance from the residence, using specialized construction practices such as stove-pipe or drag-section construction techniques, and by reducing the amount of time the trench remains open in the vicinity of residences.

Other special construction practices used to minimize construction impacts on existing residential areas include reducing workspace requirements; ensuring that construction proceeds quickly through these areas, thus minimizing exposure to nuisance effects; installation of temporary safety fencing to block off dangerous work areas; avoiding tree removal; and wetting roads and work areas to control fugitive dust.

5.8.2.2 Site-specific Impact and Mitigation

Several comments were received during the scoping process about the proximity of the pipeline to residences along 18th Avenue. Concerns were expressed about construction impacts, impact on property values, and safety. Comments related to construction impacts are addressed below. Comments related to property values and safety are addressed in sections 5.9.2.4 and 5.12.1, respectively.

Pipeline construction near the residential areas would be confined to the paved roadway or adjacent road shoulder of 18th Avenue. Although permanent easements would not be required from residential property owners abutting the paved portion of 18th Avenue, some temporary rights-of-way may be required where temporary extra workspace is needed.

NBP has prepared and would follow site-specific residential construction mitigation plans to minimize disruption and to maintain access to the 25 residences and businesses along 18th Avenue. The site-specific construction plans are described in section 2.3.2. Appendix E contains dimensioned site plans that show the following items within a minimum 100 feet of the construction work area in relation to the new pipeline:

- the pipeline centerline;

- the limits of the construction work area;
- the edge of the paved road surface;
- each residence/business and other structures;
- existing pipelines and powerlines;
- waterbodies, roads, driveways, fences, trees or other landscaping, and private wells; and
- the location of safety fencing that would be installed during construction.

Table 5.8.2-1 summarizes the site-specific mitigation measures NBP would use for each of the features potentially impacted at the residences and businesses identified along 18th Avenue.

In addition, NBP proposes to implement the following measures to minimize construction impacts on residences:

- minimize the amount of open trench at the end of the workday and cover or cordon off the trench during non-work hours;
- secure and patrol construction areas during non-work hours to minimize safety issues associated with open trenches;
- maintain an emergency ingress and egress near all residences and businesses through the construction process;
- maintain one lane of restricted traffic movement through the construction area for access to residences and for emergency vehicles;
- minimize noise by maintaining equipment in good operating condition;
- suppress dust with the use of water trucks and regular spraying; and
- temporarily relocate residents to a local motel or other lodging during the construction near their homes at NBP's expense.

We have reviewed NBP's site-specific residential construction plans and additional proposed mitigation measures to minimize the impact of construction on residences along 18th Avenue and find them generally acceptable. However, the site-specific construction plans do not specify the length of safety fencing that would be installed to protect residences. We believe safety fencing should be installed for a minimum of 100 feet on both sides of residences that are within 100 feet of the construction work area to provide adequate protection during construction. Therefore, **we recommend that:**

- **NBP file with the FERC and the CSLC before construction revised site-specific residential construction plans that include the provision that safety fencing would be installed at the edge of the construction work area for a minimum of 100 feet on both sides of each residence that is within 100 feet of the construction work area.**

TABLE 5.8.2-1

**Proposed Mitigation Measures for Residences and Businesses
Adjacent to the North Baja Pipeline Project**

County, State/ Milepost	Site-Specific Plan Number(s) <u>a/</u>	Feature(s) Potentially Impacted	Proposed Mitigation Measure(s)
La Paz County, Arizona			
—	—	—	—
Riverside County, California			
2.92	01-RES, 02-AGR	driveway, lawn, access, gravity flow irrigation system	repair driveway, replant lawn, temporarily relocate resident, shift stockpiled material, install temporary ditch
3.30	03-RES	driveway, access	repair driveway, use stove-pipe construction technique
3.62	04-RES	access	temporary use of PVID canal
3.64	05-RES	access	temporary use of PVID canal
3.72	06-RES	driveway, palm trees	repair driveway, install barrier fencing to protect palm trees, install plate over trench
3.75	07-RES	driveway, shrubs, access	repair driveway, replant shrubs and install barrier fencing to protect others, install plate over trench
3.77	08-RES	driveway, mailbox	repair driveway, replace mailbox, install plate over trench
3.84	09-RES	driveway, mailbox	repair driveway, replace mailbox, install plate over trench
3.91	10-RES	driveway, mailbox, access	repair driveway, replace mailbox, install plate over trench
3.92	11-RES	none	NA
4.11	12-RES	driveway, mailbox	repair driveway, replace mailbox
4.23	13-BUS	driveway, mailbox, lawn, access	repair driveway, replace mailbox, replant lawn, install plate over trench, use stove-pipe construction technique
4.42	14-RES	driveway, palm trees, lawn, access	repair driveway, install barrier fencing to protect trees, replant lawn, install plate over trench, use stove-pipe construction technique
4.64	15-RES	driveway, fence, shrubs, access	repair driveway, replace fence, replant shrubs, install plate over trench, use stove-pipe construction technique
4.93	16-RES	driveway, palm trees, lawn, restricted access	repair driveway, install barrier fencing to protect trees, replant lawn, use stove-pipe construction technique, coordinate with contractor
5.25	17-BUS	driveway, access	repair driveway, install plate over trench
5.72	18-RES	driveway, lawn	repair driveway, replant lawn
6.10	19-RES	driveway, lawn, access	repair driveway, replant lawn, install plate over trench, use stove-pipe construction technique
6.38	20-RES	driveway, lawn	repair driveway, replant lawn, install plate over trench, use stove-pipe construction technique
7.66	21-RES	lawn, access	replant lawn, use stove-pipe construction technique
7.91	22-RES	driveway, palm trees, shrubs, mailbox, access	repair driveway, install barrier fencing to protect trees, replant shrubs if allowed by Riverside County, shift stockpiled material, install plate over trench

TABLE 5.8.2-1 (cont'd)

**Proposed Mitigation Measures for Residences and Businesses
Adjacent to the North Baja Pipeline Project**

County, State/ Milepost	Site-Specific Plan Number(s) <u>a/</u>	Feature(s) Potentially Impacted	Proposed Mitigation Measure(s)
8.20	23-RES	driveway, trees and shrubs, mailbox, access	repair driveway, locate pipeline 6 feet from 18 th Avenue centerline, install barrier fencing to protect trees and shrubs, shift stockpiled material, use stove-pipe construction technique
8.66	24-RES	shrubs	replant shrubs if allowed by Riverside County
9.20	25-RES	access	access by Stephenson Boulevard, use stove-pipe construction technique
9.96	26-RES	driveway, fence, trees	repair driveway, shift stockpiled material, use stove-pipe construction technique
10.50 <u>b/</u>	27-AGR	gravity flow irrigation system	install temporary ditch
Imperial County, California			
-	-	-	-

a/ Site-specific plans are included in appendix E.

b/ A residence is not located in this area but a site-specific plan was developed to avoid impacting the landowner's gravity flow irrigation system.

As described in section 5.8.3.2 below, NBP would prepare a detailed traffic management plan for construction along 18th Avenue to minimize disruptions to the flow of traffic.

To help us monitor the implementation of construction procedures and mitigation measures used on this project, we would require NBP to file weekly status reports during construction that would include a description of landowner/resident complaints and how these complaints were addressed or resolved. We would follow-up on these issues or concerns during our field inspections of NBP's construction activities.

5.8.3 Transportation

5.8.3.1 General Impact and Mitigation

The existing transportation system within the project area could be temporarily affected by the immigration of construction workers (see section 5.9.2.1). Because construction would move sequentially along the proposed pipeline route, any traffic flow impacts that do arise would be temporary and local. The increase in vehicles operating on roads to and from the construction right-of-way would occur primarily during morning and evening peak times, corresponding to normal workday hours. The delivery of construction equipment and materials could also temporarily congest existing transportation networks at specific locations. To minimize disruption to traffic, construction equipment and materials would be located at contractor yards with existing adequate roadway access to the pipeline construction areas. Construction workers would also be encouraged to park at the contractor yards and carpool to work sites.

Operation and maintenance of pipeline facilities would not affect traffic flow on any of the paved roads or highways in the project area. Although periodic maintenance and inspections would be required, these events would involve only a low frequency of light vehicle movement on and off the roadways.

NBP would apply for special permits necessary for crossings of roads and railroads. Major or improved roads and railroads would be crossed by boring to avoid disrupting traffic. Unsurfaced, lightly traveled, or rural roads would be crossed by the open-cut method if approved by the owner or road management agency. Where open-cut road crossings are conducted, NBP would make provisions to detour or control traffic during construction. No roads would be closed for more than a short time unless adequate detours are provided.

5.8.3.2 Site-specific Impact and Mitigation

Major roadways potentially affected by construction and operation of the North Baja Pipeline Project include 18th Avenue, SR 78, Ogilby Road, and I-8.

Construction in the paved segment of 18th Avenue would be accomplished using urban construction techniques. To minimize the duration of inconvenience to residences, NBP proposes to close off 0.5- to 1-mile-long sections of road at a time, reroute traffic around these areas (while maintaining access for residents), and complete construction of the pipeline before moving onto the next section of road. All construction activities would be confined to the width of 18th Avenue that is estimated to be about 60 feet, including the paved roadway and road shoulders. No more than 1 mile of work area would be active at any one time, unless otherwise specified by Riverside County, and construction would advance along the road at an estimated 500 feet per day. Excluding any repaving that may be required, direct construction impacts at any given location are estimated to last about 2 to 3 weeks.

Before construction in 18th Avenue, NBP would obtain an encroachment permit from the County of Riverside Transportation Department. Design and construction methods would conform to Riverside County requirements. Preconstruction activities would include preliminary examination of the work areas and identification of the exact location of subsurface utilities, either through visual inspection or by digging potholes at intervals along the pipeline trench. If potholing identifies a conflict between existing utilities and the pipeline centerline, then the centerline would be horizontally and/or vertically realigned to eliminate the conflict.

Excavated materials would be used as a temporary road base for construction traffic to reduce wear on the existing road surface or hauled to an approved stockpile location. After the pipeline has been installed, the trench would be backfilled and compacted, and the road surface graded, restored to original contours, and paved.

NBP would develop a traffic management plan for 18th Avenue in consultation with the County of Riverside Transportation Department. The plan would identify traffic control measures; traffic signage requirements; construction hours; vehicular, pedestrian, and emergency vehicle access provisions; nightly shut-down procedures; clearance distance between excavations and vehicular traffic; placement of safety fencing; and construction equipment storage. At a minimum, NBP would incorporate the following measures into the traffic management plan for 18th Avenue:

- the pipeline would be installed with a minimum of 36 inches of cover and with a minimum of 12 inches of separation from other utilities or obstructions. A minimum of 2 feet would be maintained under canals and 5 feet over drains;
- active work areas would be limited to 1 mile in length;
- intersections would be bored or trenched and steel plated until the pipeline is installed;
- NBP would contact each owner and/or tenant of the properties abutting the road to explain the construction process and identify any special conditions or concerns that need to be incorporated into the construction plans. In addition, these adjacent residents and businesses would be notified by hand-distributed flyers 2 weeks before construction. The flyers would include the dates of construction, the work hours, traffic detours, and contact numbers for NBP and the contractor. Emergency response agencies would also be notified of the work schedule;
- the Underground Service Alert would be notified at least 48 hours before beginning work;
- flag persons would be provided to route traffic around construction equipment and obstructions;
- work would be scheduled during daylight hours unless alternative schedules are authorized;
- access would be maintained to all residences or businesses except during actual trenching operations. Steel plates would be available to maintain access to driveways during periods when the trench is open;
- fencing would be installed at the edge of the work area on both sides of each residence; and

- non-local traffic would be detoured around construction activities as much as practical.

While NBP's proposed measures to minimize the impact of construction on residents of 18th Avenue are generally acceptable, they do not incorporate the input of the County of Riverside Transportation Department. Therefore, **we recommend that:**

- **NBP file with the FERC and the CSLC for the review and written approval of the Director of OEP before construction a Traffic Management Plan for 18th Avenue prepared in consultation with the County of Riverside Transportation Department. At a minimum, the plan should include the measures listed above.**

We received a comment from Caltrans during the scoping process regarding the placement of the proposed pipeline facilities in Caltrans rights-of-way or near Caltrans structures such as state bridges. The proposed route would cross SR 78 in six locations. NBP would obtain the necessary permits needed to construct and operate its facilities at those crossings. The proposed route is also parallel to SR 78 for several miles but would not be located within the road right-of-way except at the six crossing locations. There are no bridges or other structures at these six crossings. At least five of the proposed crossings would be bored, which would minimize disruption to traffic at those locations. However, because construction vehicles and equipment would be entering and exiting SR 78 to and from several right-of-way access locations, some minor disruption could occur. At the intersection of SR 78 and 18th Avenue at MP 8.4, the mitigation measures discussed above for 18th Avenue would be implemented if open cutting of SR 78 is permitted at this location. Flag persons would be used to direct traffic during construction at each of the six crossings as required.

Ogilby Road would be crossed twice by the proposed route. NBP would bore these two crossings, which would minimize traffic disruption. Minor traffic disruptions could occur when vehicles and equipment turn off and onto Ogilby Road from the right-of-way during construction. I-8 would also be bored and no impact on traffic is expected.

5.8.4 Special Management Areas

5.8.4.1 General Impact and Mitigation

In general the most important concerns when crossing a special management area are the impact of construction on the resources that the special management area aims to protect and consistency with the management plan for the area. Pipeline construction activities such as clearing, grading, trench excavation, backfilling, and the movement of construction equipment along the right-of-way may directly and indirectly impact resources protected by a special management area. In addition, these same activities and the associated impacts on resources may be inconsistent with the management plans implemented for these areas.

5.8.4.2 Site-specific Impact and Mitigation

Approximately 81 percent of the proposed route is located within the CDCA. About 42.2 miles of the pipeline route within the CDCA are managed by the BLM as multiple-use class "L" (12.5 miles) or "M" (29.7 miles). On these lands, "new gas, electric, and water transmission facilities and cables for interstate communications may be allowed only within designated corridors" (BLM, 1980). As discussed further in section 6.1.3, the proposed route crosses BLM land in five locations outside of designated utility corridors. Due to the deviations from designated utility corridors, the proposed project would conflict with the CDCA

Plan and would require a plan amendment for a total of approximately 19.8 miles of the proposed route. Section 6.1.3 describes the reasons why NBP proposes to deviate from the designated utility corridors.

Of the 19.8 miles requiring a CDCA Plan amendment, approximately 0.9 mile is located within the Milpitas Wash WHA. In addition to the CDCA Plan, this area is managed by the Milpitas Wash WHMP. As described in section 5.7, NBP proposes a number of conservation measures protecting wildlife and special status plants that are generally consistent with the objectives of the Milpitas Wash WHMP.

The pipeline route crosses the Milpitas Wash SMA between MPs 29.2 and 33.8. Approximately 3.3 miles of this segment are managed by the BLM Yuma Field Office and would require an amendment to the Yuma District Plan. As described in section 5.7, NBP proposes a number of conservation measures protecting wildlife and special status plants that are generally consistent with objectives of the Milpitas Wash SMA component of the Yuma District Plan.

NBP submitted a right-of-way grant application to the BLM on November 16, 2000 and would need to receive the BLM's approval in order to locate the pipeline on BLM lands. It would also be the BLM's responsibility to amend the CDCA Plan and the Yuma District Plan (see section 1.8). The plan amendments would not amend the majority of the decisions, goals, and objectives established in either the CDCA Plan or the Yuma District Plan. The amendments would only accommodate the North Baja Pipeline Project and would not create a new corridor or modify existing corridors.

5.8.5 Recreation and Public Interest Areas

5.8.5.1 General Impact and Mitigation

Generally one of the most important concerns when crossing recreational or public interest areas is the impact of construction on recreational activities and public access. Disruption and noise during construction could be a nuisance to recreational users, and could cause disturbance to wildlife, especially in protected areas. The impact in any one area, however, would be temporary, lasting several days to several weeks.

Another important concern is the effect of construction on areas of public interest near the proposed facilities and whether the proposed project could increase access into areas of environmental concern. Construction-induced effects on users of public interest areas near the proposed facilities would be temporary. The increased accessibility of environmentally sensitive areas would be a long-term effect.

5.8.5.2 Site-specific Impact and Mitigation

The recreational or public interest areas crossed by the proposed pipeline include the Colorado River (MP 0.2), the Bradshaw Trail (MP 18.3), and the quarry operated by the BOR (MPs 29.2 to 29.6).

The Colorado River would be directionally drilled, which would minimize impacts on the river and would not limit the use of the river for recreational purposes. Use of an unpaved public access road to the river would be disrupted but not closed during construction of the Ehrenberg Compressor Station. Construction of the compressor station is expected to last up to 6 months and undisturbed use of this access road would resume thereafter.

The pipeline crossing of the Bradshaw Trail would have a temporary impact because use of the trail would be disrupted for several days during construction. The trail is managed by the BLM at the location of

the pipeline crossing. The BLM has not established a standard set of restoration measures that would apply specifically to the Bradshaw Trail (Kalish, 2001). After construction, NBP would restore the trail to its preconstruction condition.

The BOR has no plans to conduct quarrying operations in the location crossed by the proposed route. As discussed in section 5.1.2, future expansion at the quarry would be vertically and/or eastward and would not be affected by the pipeline. As a result, the proposed pipeline would not interfere with mining operations.

Other areas of public interest found near the proposed pipeline or aboveground facilities include the Cibola NWR, Mule Mountain ACEC, Pilot Knob ACEC, the Palo Verde Wilderness Area, Ehrenberg Sandbowl OHV area, the Imperial Sand Dunes, and an informal camp site near the Ogilby Meter Station. Because these areas are not crossed by the proposed pipeline or aboveground facilities, the designated use or purpose of these areas would not be directly affected during construction. However, due to their close proximity, these land uses may be indirectly affected by pipeline construction. Construction-induced effects such as traffic, noise, and dust may affect the quality of some users' recreational experiences, but any effects would be temporary in nature and would occur in the summer months when recreational use is at its lowest. The delivery of construction equipment and materials would not prevent access to any of these public interest areas or facilities, although recreationists may choose to use other recreational areas during pipeline construction.

Operation of the proposed pipeline would entail periodic visits for maintenance purposes, which would not affect any recreational or special interest areas in the project area. The pipeline centerline would be clearly delineated using locator markers. NBP has stated that it has no plans to maintain an improved permanent right-of-way for operation and maintenance. However, NBP would have to maintain access to all portions of the permanent right-of-way by four-wheel drive vehicles in order to conduct emergency and periodic maintenance. In addition, a new permanent 0.02 mile access road would be constructed as part of the project. The level of access required by NBP should not result in increased OHV access. However, one of the long-term effects of pipeline construction and maintenance is the increased accessibility the right-of-way provides for OHV use into previously restricted, inaccessible, or environmentally sensitive areas. The FWS has expressed specific concern about the proximity of the proposed pipeline route to the Imperial Sand Dunes and the increased accessibility that the right-of-way could provide into this sensitive area. To reduce the potential for OHV use of the right-of-way, NBP has agreed to install blocking measures at intersecting road crossings (see appendix D). Measures would include placement of organic matter and rocks, raking the right-of-way to create a natural looking appearance, or plantings of salvaged cactus and ocotillo. We evaluated one route alternative and two route variations that would move the pipeline route further from the Imperial Sand Dunes (see sections 6.1.3 and 6.2.2).

5.8.6 Visual Resources

5.8.6.1 General Impact and Mitigation

There are two types of potential impact on visual resources associated with construction and operation of the project facilities: that resulting from alteration of terrain and vegetation patterns due to facility construction or right-of-way maintenance, and that resulting from the presence of the new aboveground facilities.

During construction, the cleared and graded right-of-way, as well as construction equipment operating on the right-of-way, would be visible from any surrounding residences and local roads. Because the terrain over much of the project area is relatively flat, views of the construction activity may extend for

some distance. Following construction, the primary visual impact would be the right-of-way, which due to the arid climate and slow regeneration of native vegetation could be noticeable for many years.

5.8.6.2 Site-specific Impact and Mitigation

Construction-related impacts would result from the presence of construction workers and equipment in rural areas and surface disturbances from clearing and grading operations. The presence of construction workers/equipment would be a temporary, minor impact on visual resources. The visual impact of the right-of-way following construction depends on the visual contrast in form, line, color, and texture created between the proposed project and the existing landscape. These factors are discussed by milepost below.

MPs 0.0 to 11.7

In the agricultural areas of the Palo Verde Valley, visual impact would be temporary and minor. The terrain is flat and agricultural operations and the planting of crops would resume following construction. Construction activity would be a temporary visual intrusion to residents along 18th Avenue. The Colorado River would be directionally drilled, and setbacks from the river would protect existing vegetation, so views from the river and adjacent areas should not be affected. Lands within this route segment do not have a VRM classification.

MPs 11.7 to 29.7 and MPs 31.5 to 79.8

In the desert landscape environment of these two route segments, a low degree of visual impact would occur initially and would be further reduced over time. Visibility resulting from contrast in soil color and vegetative pattern between the right-of-way and adjacent areas would be partially offset by limited viewing afforded by areas with flat to low relief and views which include existing manmade features. Adjacent features along most of the length of these segments include paved and desert wash roads, levees, canals, electric distribution, and high voltage electric lines. Over time, the contrast would diminish and the visual effect of the installed pipeline would be minimal.

BLM lands along these two route segments include 20.6 miles in VRM class II, 18.9 miles in class III, and 7.5 miles in class IV. The degree of contrast with the characteristic landscape resulting from the proposed pipeline would be consistent with the visual management objectives of these classes. The scenic quality in these classes ranges from good to fair with no areas rated as high. Moderate sensitivity ratings predominate. Changes in form, line, color, and texture would be reduced between MPs 12.1 to 22.3, MPs 39.0 to 51.7, MPs 55.0 to 61.0, and MPs 66.8 to 74.6 because the proposed pipeline route would be adjacent to other linear facilities, including an existing electric transmission line and Ogilby Road.

MPs 29.7 to 31.5

In this route segment, the pipeline would cross hilly terrain backdropped by the steeper slopes of the Palo Verde Mountains. BLM land along this route segment is classified as VRM class II. Scenic quality is rated as good with sensitivity rated as high. Site grading to prepare for pipeline installation and maintenance would create a right-of-way that would visually contrast with the surrounding landscape. If blasting is required to install the pipeline in this area, the scars from the blasting would also be visible. Additionally, NBP may have to install the pipeline by spanning across areas of steep terrain rather than installing the pipe below ground. These aerial crossings would be visible. The specific alignment selected could reduce the visibility of the right-of-way, aerial crossings, and any scarring that would result from blasting. The proposed pipeline route alignment follows a break in terrain between the steeper slopes to the west and the gentler

foothills to the east. Potential viewing locations would be from SR 78, which is parallel to the proposed pipeline route. Few longitudinal views down the right-of-way would occur. Most often, glimpses of the right-of-way would be seen while traveling SR 78 with the dominant visual feature being the background with mountain peaks rising 1,600 feet above the pipeline location. The highway alignment in this area is curvilinear with vertical changes in grade. A single lane exists in either direction. All of these factors would compete with the viewer's attention. Overall, there would be a moderate degree of visual contrast that would diminish over time as soil color and vegetation approximate preconstruction conditions. To further reduce contrast between the pipeline right-of-way and landscape, NBP would chemically treat scars created by blasting where they would have a high visibility to a moderate to high number of viewers and paint the pipeline to match the surrounding landscape at all aerial crossings.

Aboveground Facilities

The aboveground facilities would have a permanent impact on visual resources. The Ehrenberg Compressor Station site is not located on BLM land and is not in an area with a VRM classification. During construction of the Ehrenberg Compressor Station, the presence of construction workers and equipment in the project area would be a minor visual disruption. Residents on the west side of the Colorado River would have a partial view of the facility. The station also would be minimally visible from I-10 located approximately 1 mile north. However, visual impact on these residents and travelers would be low due to distance and intervening vegetation. Recreationists accessing the boat ramp from the dirt road bordering the south end of the site would have an unobstructed view of the compressor station site, which is currently agricultural land, but the new facility would be seen in the context of several nearby industrial and commercial uses that include the El Paso meter station, I-10, a motel, and the Flying J rest stop.

The majority of the facilities located at the Rannells Trap would be located below ground, which would limit the visibility of this facility and minimize effects to the surrounding visual landscape. The pig receiver and launcher traps would be the only aboveground structures at this site. The receiver trap would extend approximately 3 to 4 feet above the surface and the launcher would extend approximately 6 to 8 feet above the surface. The facility would be located in open land (desert) adjacent to an agricultural field approximately 0.8 mile west of the end of the unpaved portion of 18th Avenue and 1.3 miles west of the end of the paved portion of the road at the intersection of Keim Boulevard. The facility would only be seen by travelers along the unpaved portion of the road with limited viewing from the intersection of 18th Avenue and Keim Boulevard. After construction, the facility would be fenced and the aboveground structures would be painted to blend with the surroundings. The Rannells Trap is not located on BLM land and is not in an area with a VRM classification.

The Ogilby Meter Station would be located in the open desert in an area with a class II VRM designation. The presence of construction crews and equipment would be a minor visual disruption. The structure itself would be visible to travelers using I-8. However, it would be seen in the context of existing landscape features, which include other manmade structures such as I-8 and high voltage electric lines. To minimize visibility, NBP would paint the meter station building so that it would blend with the surrounding landscape. The degree of contrast with the existing landscape would not attract attention and would be consistent with VRM class II objectives.

The four MLVs that are not at other aboveground facility sites would have a minor effect on the surrounding visual landscape. Most of the facilities associated with the MLVs would be below ground. The only aboveground facilities would include a valve steam operator, which would be 5 feet in height, and a 6- to 8-foot-high blowdown stack. After construction, each facility would be fenced and the aboveground structures would be painted to blend with the surrounding landscape. One of these MLVs would be on an

industrial site and would be seen in the context of other commercial facilities. The other three MLVs would primarily be seen from roadways where road alignment and driving speed limit views and viewing time. Two MLVs would be on land managed by the BLM that has a VRM classification of III.

The project would not have a substantial effect on a scenic vista nor substantially damage scenic resources within a state scenic highway since none exist in the project area. Small flood lights would be used at the Ehrenberg Compressor Station and Ogilby Meter Station sites. Due to the presence of other manmade sources of light in the area, the use of these small floodlights would not create an additional source of substantial light or glare that would adversely affect day or nighttime views in the area.

5.9 SOCIOECONOMICS

5.9.1 General Impact and Mitigation

Some of the potential socioeconomic effects from construction, operation, and maintenance of the project are related to the number of construction workers that would work on the project and their impact on population, public services, and temporary housing during construction. Other potential effects are related to construction, such as increased traffic or disruption of normal traffic patterns along the route, or temporary disturbance of agricultural land, homes, and businesses. Other effects associated with the project include increased property tax revenue, increased job opportunities and income associated with local construction employment, and local expenditures by the pipeline company and non-local construction workers.

The potential impact of the project on existing traffic and land uses is discussed in section 5.8. A discussion of the project's effects on population and employment, public services, housing, and tax revenue is provided below as well as a discussion of the impact of the project on property values.

5.9.2 Site-specific Impact and Mitigation

5.9.2.1 Population, Economy, and Employment

Table 5.9.2-1 lists the size of the proposed workforce for the major project components. NBP estimates that between 250 and 350 workers would be employed. Of these, about 150 to 200 workers would be needed to construct the pipeline and 100 to 150 workers would be needed to construct the compressor station. NBP estimates that between 50 and 70 workers could be hired from the local workforce if they are available and possess the required skills. The relatively high unemployment rates in the project area suggest that local workers could be found. Additional construction personnel would be hired from outside the project area. These would typically include pipeline construction specialists, supervisory personnel, and inspectors who would temporarily relocate to the project area.

Project-area population impacts are expected to be temporary and proportionally small. The total population change would equal the total number of non-local construction workers, plus any family members accompanying them. Given the brief (approximately 6-month) construction period, most non-local workers are not expected to be accompanied by their families. Assuming 20 percent of the up to 280 non-local workers bring three other family members with them, the total increase in population to the project area would be about 448 people. This temporary increase would not constitute a major impact on population.

NBP anticipates adding approximately four permanent staff to handle project operations, with additional support provided by locally based contractors as needed. This small staff would have little or no permanent impact on the local population.

TABLE 5.9.2-1 Estimated Construction Workforce for the North Baja Pipeline Project			
Facility	Milepost	Estimated Workforce	Location
Pipeline ^{a/}	0.0-79.8	150-200 workers	La Paz County, Arizona Riverside County, California Imperial County, California
Ehrenberg Compressor Station	0.0	100-150 workers	La Paz County, Arizona
Rannells Trap	11.7	Subset of pipeline workforce	Riverside County, California
Ogilby Meter Station	75.2	Subset of compressor station workforce	Imperial County, California
^{a/} Includes the interconnect pipeline, which is not mileposted.			

5.9.2.2 Housing

No impacts on local housing markets are expected. Because the construction period for the project is relatively short, and because most non-local workers are expected to come alone without their families due to the temporary nature of the relocations, most workers are likely to use temporary housing such as hotels, motels, apartments, and campgrounds within commuting distance of the project area. Non-local workers should be able to locate temporary housing in the Blythe, California area; in the campgrounds and RV parks east of Ehrenberg, Arizona; or near Yuma, Arizona.

Assuming that local construction workers do not require housing, up to 280 housing units for the non-local workers may be required. Previous pipeline experience suggests that non-local workers typically select a variety of temporary housing accommodations, with approximately 30 percent providing their own housing units (*i.e.*, travel trailers or RV campers). Given the vacancy rates in the area (see table 4.9.3-2), NBP does not anticipate that construction crews would encounter difficulty in finding temporary housing. If construction occurs during the peak tourism (winter) months, temporary housing would still be available but may be slightly more difficult to find, and/or more expensive to secure.

Although the vacancy rate for temporary housing in Imperial County is currently about 5 percent, this rate is unlikely to change due to construction. Most non-local workers temporarily relocating to the southern portion of the project area would likely find housing near Yuma, Arizona, and thus would not affect the Imperial County vacancy rate.

5.9.2.3 Public Services

Because the non-local workforce would be so small relative to the current population, construction of the pipeline would result in minor, temporary or no impact on local community facilities and services such as police, fire, and medical services. Local communities have adequate infrastructure and community services to meet the needs of the out-of-area workers that would be required for the project. Other construction-related demands on local agencies could include increased enforcement activities associated with issuing permits for vehicle load and width limits, local police assistance during construction at road crossings to facilitate traffic flow, and emergency medical services to treat injuries resulting from construction accidents. NBP would work with local firefighters and other emergency responders to coordinate activities for effective emergency response.

With respect to pipeline facilities in California, the project has no wastewater treatment requirements and the project would not require construction of new or expanded wastewater facilities or storm water drainage facilities that could cause significant environmental effects. The project has no water supply needs in California. The project's solid waste disposal needs would be modest and can be accommodated by existing landfills. The project would comply with Federal, state, and local statutes and regulations related to wastewater and solid waste disposal.

The small permanent staff at the Ehrenberg Compressor Station in Arizona during operation of the project would use minor amounts of water and would produce minor amounts of wastewater and solid waste.

5.9.2.4 Property Values

We received comments during the scoping process that installation of the pipeline along 18th Avenue would lower property values. The currently available information does not support any firm conclusion with respect to the effect of pipelines on property values. Appraisal methods used to value land are based on objective characteristics of the property and any improvements. The impact a pipeline may have on the value of a tract of land depends on many factors, including the size of the tract, the values of adjacent properties, the presence of other pipelines, the current value of the land, and the current land use. A potential purchaser would make an offer to purchase based on his or her own values, which might or might not take the pipeline's presence into account. We have insufficient data to conclude that any significant impacts on property values would occur.

The effect that an easement may have on property values is an issue that is negotiated between NBP and the landowners during the easement acquisition process. The easement acquisition process is designed to provide fair compensation to the landowner for the right to use the property for pipeline construction and operation.

Property taxes for a parcel of land are generally based on the actual use of the land. Except for the aboveground facility sites, the pipeline would not change the land use. It would, however, preclude construction of aboveground structures on the permanent right-of-way. Any landowner who feels that the presence of the pipeline easement reduces the value of his/her land, resulting in an overpayment of property taxes, may appeal the assessment/taxation issue to the local property tax agency.

5.9.2.5 Tax Revenue

Construction and operation of the pipeline would have a positive effect on local tax revenue, based on the tax revenue projections contained in tables 5.9.2-2 and 5.9.2-3. Revenue from sales tax would be greater during construction based on the temporary influx of workers to the area. The increase in property tax revenue, equaling \$1.9 million annually, and sales tax revenue from the four permanent staff, would be permanent.

TABLE 5.9.2-2		
Estimated Property Tax Payments by County for the North Baja Pipeline Project		
Facility	Location	Estimated Annual Tax
Ehrenberg Compressor Station, Pipeline	La Paz County, Arizona	\$693,000
Rannells Trap, Pipeline	Riverside County, California	\$367,000
Ogilby Meter Station, Pipeline	Imperial County, California	\$876,000
Project Total		\$1,936,000

TABLE 5.9.2-3				
Estimated Sales Tax Revenue by County from the North Baja Pipeline Project				
		La Paz, Arizona	Riverside, California	Imperial, California
Construction				
Total Payroll	\$44,000,000	NA	NA	NA
Percent of total income spent for taxable sales	38.8%	NA	NA	NA
Income spent for taxable sales	\$17,072,000	NA	NA	NA
Percent spent in each county		10%	80%	10%
Income spent for taxable sales by county		\$1,707,200	\$13,657,600	\$1,707,200
Tax Rate		6%	7.50%	7.50%
Sales tax distribution by county		\$102,432	\$1,024,320	\$128,040
Operation				
Annual Payroll	\$245,000	NA	NA	NA
Percent of total income spent for taxable sales	38.8%	NA	NA	NA
Income spent for taxable sales	\$95,060	NA	NA	NA
Percent spent in each county		10%	80%	10%
Income spent for taxable sales by county		\$9,506	\$76,048	\$9,506
Tax Rate		6%	7.50%	7.50%
Sales tax distribution by county		\$570	\$5,704	\$713
Sources: California Board of Equalization (www.boe.ca.gov); Hamlin, 2001.				

5.9.2.6 Environmental Justice

Executive Order 12898 on Environmental Justice requires that each Federal agency address disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations. Federal agencies' responsibilities under this order also apply equally to Native American programs.

Table 5.9.2-4 presents the general ethnic mix and the economic status of the counties and states that would be affected by the project. All three counties, particularly Imperial County, California, have a higher percentage Hispanic population than their respective state averages. In addition to a high Hispanic population, all three counties have a higher percentage of households receiving public assistance, and lower median family income than their respective state averages. La Paz County, Arizona has the greatest population of Native Americans on the project. Although two of the three project area counties can be characterized as poorer than average, with higher than average minority populations, there is no evidence that the project would adversely affect the population because the pipeline route is located exclusively in a rural area, and most of it crosses remote, unpopulated stretches of desert.

TABLE 5.9.2-4								
Environmental Justice Statistics for the North Baja Pipeline Project								
State/County	Racial/Ethnic Group, 1990 (percent)					Households with Public Assistance Income <u>c/</u> (percent)	Median Family Income (1989)	Poverty Rate (1993) <u>d/</u> (percent)
	White	Black	American Indian <u>a/</u>	Asian <u>b/</u>	Hispanic			
Arizona	71.7	2.9	5.2	1.4	18.8	6.1	\$32,178	18.5
La Paz	61.5	0.7	14.5	0.5	22.8	9.1	\$18,771	26.4
California	57.2	7.0	0.6	9.3	25.9	9.4	\$40,559	17.4
Riverside <u>e/</u>	63.9	4.8	0.9	0.2	27.7	9.5	\$33,293	15.0 <u>f/</u>
Imperial	29.0	2.2	1.4	1.5	65.9	18.2	\$25,147	28.6
<u>a/</u> Includes Inuit and Aleutian Islanders.								
<u>b/</u> Includes Pacific Islanders.								
<u>c/</u> Households include families, groups of unrelated people living together, and people living alone.								
<u>d/</u> Percent of persons with incomes below the poverty level in 1993, as defined by the Census Bureau for Federal statistical purposes, on the basis of family size and family income.								
<u>e/</u> Estimates for eastern portion of county (Congressional District 44) where proposed route is located.								
<u>f/</u> Estimate represents Riverside County. Estimate not available for Congressional District 44.								
Source: U.S. Department of Commerce, Bureau of the Census, 1990 Census of Population and Housing, STF3A Files; USA Counties General Profile (www.census.gov).								

Under Executive Order 12898, each Federal agency must ensure that public documents, notices, and hearings are readily available to the public. The mailing distribution list for this draft EIS/EIR and draft plan amendment was initiated when the NOI/NOP was first issued, and has been continually updated during the EIS/EIR and plan amendment process. The original mailing list included all affected property owners along the proposed routes, as identified by the applicant, without any distinction based on minority or income status. The mailing list also included Native American groups identified as having an interest in the project area. Unless a party on the original mailing list submitted a request to be removed from the mailing list they were kept on the list and continued to receive information on the project.

Two public scoping meetings provided property owners, municipalities, counties, special interest groups, and state and Federal regulatory agencies an opportunity to comment on the project. Because the three counties crossed by NBP have a higher percentage Hispanic population than their respective state averages, we published the notices of the public scoping meetings in local newspapers both in English and Spanish. Section 1.4 further describes the public notification and participation process. Sections 4.10.3 and 5.10.2 describe contacts with Native American tribes that traditionally occupied, or currently occupy, the project area.

For this project, we required NBP to identify and submit site-specific plans for all residences within 100 feet of the construction work area. From this information, we analyzed the pipeline route with respect to how close in feet the proposed right-of-way is to the residence and other engineering constraints that may affect construction and the safety and welfare of the residents during construction. We required NBP to submit site-specific construction plans to identify special construction procedures, techniques, and/or site-

specific mitigation measures to minimize impact on these residences, regardless of the income or minority status of the resident. Where necessary, we have identified and recommended additional mitigation measures to further reduce potential impact.

We believe that, with the implementation of NBP's proposed mitigation measures and our additional requirements, construction and operation of the project would not result in a significant impact on urban or residential areas. In addition, we have not identified any disproportionately high and adverse human health or environmental effects on minority and low-income communities or Native American groups. Furthermore, project construction would provide some short-term job opportunities. The only long-term socioeconomic effect of the project is likely to be beneficial, based on the increase in tax revenue that would accrue to the counties where pipeline facilities are located.

5.10 CULTURAL RESOURCES

5.10.1 General Impact and Mitigation

The FERC and the BLM are responsible for complying with Section 106 of the National Historic Preservation Act (NHPA), which requires Federal agencies to take into account the effects of their undertakings on historic properties and affords the Advisory Council on Historic Preservation (ACHP) an opportunity to comment. The procedures for complying with Section 106 are outlined in the ACHP's regulations (36 CFR 800). The effects of the project on properties of traditional religious and cultural importance to Native Americans must also be considered according to Section 101 (d)(6) of the NHPA and the American Indian Religious Freedom Act. In addition to these responsibilities, the BLM must consider Native American religious and cultural concerns for the portion of the project crossing Federal lands in accordance with the Archaeological Resource Protection Act and the Native American Graves Protection and Repatriation Act.

The CSLC is responsible for complying with those provisions of CEQA covering cultural resources. The significance criteria for impacts on historic properties and suggested mitigation are also contained within CEQA and the Guidelines for Implementation of CEQA.

On behalf of the FERC and the BLM, NBP conducted a literature search and field studies, which included the APE (*i.e.*, the construction right-of-way, temporary extra workspaces, contractor yards, aboveground facility sites, route alternatives and route variations, and new or to-be-improved access roads). NBP has also contacted the appropriate federally recognized Indian tribes and interested Native American groups and sought their assistance in identifying Native American religious sites, traditional cultural properties, and other cultural resources issues of concern. NBP summarized these investigations in reports, which are discussed in section 4.10.

As the lead Federal agency, the FERC is responsible for officially determining NRHP eligibility and project effects in consultation with the Arizona and California SHPOs, the BLM, and the BOR. If, after completing review, the agencies agree that all cultural resources found during surveys are ineligible for the NRHP, no further consideration of historic properties would be required.

If NBP's surveys are incomplete and do not cover all of the APE, additional survey would need to be conducted. If additional cultural resources are identified in areas that have not been surveyed within the APE, the FERC and other agencies would need to assess the significance of these resources before construction in the area.

If any NRHP-eligible or -listed cultural resources are identified within the APE and cannot be avoided, NBP would be required to prepare a site-specific treatment plan indicating how impact would be reduced or mitigated. Mitigation could include data recovery through archaeological excavation or historic documentation meeting the standards of the Historic American Building Survey or the Historic American Engineering Record. Once a treatment plan is approved by the appropriate reviewing parties, NBP would implement the specified treatment measure(s) before receiving notice to proceed with project construction.

5.10.2 Site-specific Impact and Mitigation

Historic Properties and Project Effects

NBP has conducted identification-level cultural resources surveys along the entire proposed route, access roads, extra workspaces, a portion of the Ehrenberg Compressor Station site, the Ogilby Meter Station site, the Ogilby and 18th Avenue Contractor Yards, the Powerline North and South Alternatives, and the Cibola Variation. The location for the one MLV that is not collocated with other aboveground facilities or in the permanent right-of-way was included in the survey of the 18th Avenue Contractor Yard.

One hundred forty-four cultural resources were identified during surveys. One of these resources is the Bradshaw Trail. The BLM has expressed concern regarding the Bradshaw Trail because it is a National Back Country Byway. While NBP's consultants have recommended the trail as potentially eligible for listing on the NRHP, the location that would be crossed by the North Baja pipeline has been previously disturbed and NBP's consultants do not recommend additional work. Of the remaining 143 resources located during identification-level surveys, NBP's consultants recommended that 72 be evaluated for their eligibility for listing on the NRHP. Sixty-six of these resources are addressed in NBP's Evaluation Plan (Cleland *et al.*, 2000). The Evaluation Plan will be supplemented to include evaluation recommendations for any additional cultural resources that are identified. In addition, NBP has contacted the BOR regarding the potential effects the proposed directional drill may have on the All American Canal. No comments have been received from the BOR at this time.

The California SHPO has reviewed the overview and survey report, addendum report, and Evaluation Plan. The California SHPO's comments are summarized in section 4.10.1. The Arizona SHPO requested additional information from NBP in order to complete its review of the survey reports and Discovery Plan. The California SHPO has not yet commented on the Discovery Plan or the second, third, or fourth addendum reports and no comments on any of NBP's cultural resources materials have been received from the BLM. The Arizona SHPO has not yet commented on the fourth addendum report.

Native American Consultations

NBP contacted 23 Native American groups whose traditional territories were in or close to the project APE or who had been identified by the SHPO or another knowledgeable party as having a potential cultural resources concern. These groups include representatives of the Quechan, Kumeyaay, Colorado River, Chemehuevi, Yavapai, Cahuilla, Hualapai, and Hopi Tribes. Four of these tribes (the Hopi, Chemehuevi, Quechan, and Cahuilla [Agua Caliente]) submitted comments (see table 4.10.3-1).

A representative of the Hopi Cultural Preservation Office requested copies of NBP's survey reports. NBP provided the reports in February 2001. One of several representatives contacted from the Chemehuevi Tribe suggested a meeting between NBP and representatives from the Colorado River Indian Tribe, the Quechan Tribe, the Chemehuevi Tribe, and the Yavapai-Apache Tribe. NBP contacted this individual and after further discussion it was mutually agreed that a meeting was not necessary because NBP had contacted

representatives of these tribes individually. The Quechan Tribe expressed concern about the Pilot Knob area and requested that the pipeline be located as far away from this area as possible. Pilot Knob is located outside the project area. NBP has provided the Quechan Tribe with copies of the survey reports, met with members of the tribe, and conducted field visits with members of the Quechan Culture Committee. The Agua Caliente and the Morongo Band of Mission Indians both commented that the project was not in their traditional use area.

Alfredo A. Figueroa, a representative from the group "From the Cradle of Aztlan," and Salvador C. Garcia, Jr. submitted comments on the project. We are currently reviewing the information provided by these individuals.

NBP has indicated that it intends to continue its consultations with Native American groups throughout the environmental review and construction process. We believe NBP's continued cooperation with these tribes should address the tribal issues associated with the proposed project.

Compliance with the NHPA

NBP has not yet identified all historic properties within the APE. Consequently, we have not completed the process of complying with Section 106 of the NHPA. Cultural resources surveys still need to be conducted at the Ripley Contractor Yard and the southern portion of the Ehrenberg Compressor Station site. NBP needs to complete additional investigations at 72 cultural resources. Once cultural resources surveys and evaluations are completed, the FERC will consult with the CSLC, the SHPOs, the BLM, and the BOR and make determinations of NRHP eligibility and project effects. If any historic property would be adversely affected, we would notify the ACHP, and discuss the resolution of adverse effects with the consulting parties.

To ensure that the FERC's, the CSLC's, and the BLM's responsibilities under the NHPA and its implementing regulations are met, **we recommend that:**

- **NBP defer construction and use of its facilities and any staging, storage, or temporary work areas and new or to-be-improved access roads until:**
 - a. **NBP prepares and files with the FERC and the CSLC, and submits to the Arizona and California SHPOs, the BLM, and the BOR, as appropriate, any outstanding cultural resources reports, testing and evaluation reports, and necessary treatment plans;**
 - b. **NBP files with the FERC and the CSLC the comments of the SHPOs, the BLM, and the BOR, as appropriate, on all cultural resources reports and plans submitted for review;**
 - c. **the ACHP has been given an opportunity to comment if required; and**
 - d. **the Director of OEP reviews and approves all cultural resources reports and plans, and notifies NBP in writing that construction may proceed.**

All material filed with the FERC and the CSLC containing location, character, and ownership information about cultural resources must have the cover and any relevant pages therein clearly labeled in bold lettering: "CONTAINS PRIVILEGED INFORMATION - DO NOT RELEASE."

5.11 AIR QUALITY AND NOISE

5.11.1 Ambient Air Quality

5.11.1.1 General Impact and Mitigation

The North Baja Pipeline Project would generate air emissions from temporary construction activities as well as operational activities. Construction of the proposed compressor station, pipeline, and meter stations could cause temporary impacts due to fugitive dust emissions, and operation of construction vehicles and equipment could result in minor temporary increases in emissions in limited areas. Construction activities are expected to be insignificant sources of air pollution given their low emissions and short duration (approximately 6 months for the compressor station and 2 to 3 weeks for any one location of the pipeline). NBP would prepare a dust control plan identifying the active mitigation that would be used during construction to minimize the fugitive dust emissions and submit it to the Mojave Desert Air Quality Management District (AQMD) in accordance with the Mojave Desert AQMD Rule 403-2.

Arizona regulation R18-2-606 requires that "... reasonable precautions, such as the use of spray bars, wetting agents, dust suppressants, covering the load, and hoods to prevent excessive amounts of particulate matter from becoming airborne" be employed at construction sites. Also the Mojave Desert AQMD and the Imperial County Air Pollution Control District (APCD) have rules that delineate the requirements for controlling fugitive dust from construction operations. The requirements include implementing Reasonably Available Control Measures such as wetting agents, dust suppressants, and other means to prevent particulates from becoming airborne.

5.11.1.2 Site-specific Impact and Mitigation

Regulatory Requirements

During operation, the emissions from the Ehrenberg Compressor Station and Ogilby Meter Station would include the following criteria pollutants: PM₁₀, SO₂, NO_x, CO, and volatile organic compounds (VOC). The North Baja Pipeline Project would be required to meet all Federal, state, and local regulations. The following paragraphs review the principal regulations and their applicability.

New Source Review Program - The new source review (NSR) program requirements are outlined in 40 CFR 52.21 and are part of the NAAQS. The NSR program requires major stationary sources to obtain a permit before building new or modifying existing units if completion of the modification would result in a significant increase in the emissions of a regulated air pollutant.

Prevention of Significant Deterioration - The Prevention of Significant Deterioration (PSD) program is outlined in the NSR program and applies to new major sources or major modifications at sources located in areas that do not exceed the NAAQS for any regulated criteria pollutants. A major source or major modification is classified as a stationary source or modification with a net emission increase of a regulated criteria pollutant of 100 tons per year (tpy) or more for sources listed in 40 CFR 52.21 (b)(1)(I)(a) or 250 tpy for sources not listed in 40 CFR 52.21 (b)(1)(I)(a). Since pipeline compressor stations are not listed in 40 CFR 52.21 (b)(1)(I)(a), the PSD applicability threshold is 250 tpy for any regulated criteria pollutant. An air pollution source that is subject to PSD review is required to: 1) submit a review of existing air quality; 2) use modeling analyses to demonstrate compliance with the NAAQS and applicable increments; 3) apply Best Available Control Technology to modified emission sources; and 4) include an analysis for the general impact on the environment. The Ehrenberg Compressor Station would be located in La Paz County, Arizona,

which is in attainment of the NAAQS. The Ogilby Meter Station would be located in Imperial County which is in non-attainment of the NAAQS for PM₁₀ and the California Air Quality Standards for Ozone.

New Source Performance Standards - Federal New Source Performance Standards (NSPS) are outlined in 40 CFR 60. Applicable state performance standards are outlined in AAC Title 18, Chapter 2, Article 9. NSPS requirements have been established for gas turbines in 40 CFR 60 Subpart GG. Subpart GG has been adopted by reference in the AAC, R18-2-901. Subpart GG establishes emission standards for NO_x and SO₂ as well as testing and monitoring requirements. No NSPS have been established for natural gas-fired reciprocating engines.

Conformity Analysis Requirements - A conformity analysis must be conducted if a Federal action would generate emissions that would exceed the conformity thresholds levels (*de minimis*) of the pollutants for which an air basin is in nonattainment. A conformity analysis must show that the emissions would conform to the state implementation plan (SIP) and would not worsen air quality in the air basin, which could be demonstrated through offsets, SIP provisions, or modeling. Emissions from sources subject to NSR or PSD requirements are exempt and are deemed to have conformed. The requirements for conformity analysis are in Title 40, CFR, Parts 6, 51, and 93, and became effective March 15, 1994. If a conformity analysis is required, it will be prepared separate from the analyses for this draft EIS/EIR and draft plan amendment. The conformity analysis will show that emissions generated from construction equipment would conform to the SIP and would not worsen air quality in the air basin.

Part 70 Operating Permit Program - Title V of the Clean Air Act requires an operating permit for any “major source” of air pollution. Operating permit requirements are outlined in Part 70 of the CFR Title 40. In 40 CFR 70, the EPA requires each state to develop an operating permit program. Part 70 also establishes criteria and hazardous air pollutant (HAP) thresholds for defining “major sources” of air pollution. If a facility’s potential emission of a regulated pollutant is greater than the “major source” threshold, the facility is a major source and must obtain a Part 70 operating permit. The “major source” threshold level for criteria pollutants is 100 tpy for sources located in attainment areas. The “major source” threshold level for HAPs is 10 tpy for any one HAP and 25 tpy for combined HAPs.

State Regulations - Standards of performance for existing stationary rotating machinery, including internal combustion engines, are regulated by AAC R18-2-719. The rule establishes emission limits for PM, SO₂, and opacity. The rule is applicable to the turbines and the reciprocating engine at the Ehrenberg Compressor Station.

Mobile Source Regulations - Federal regulation 40 CFR 85 establishes requirements for nonroad engines and vehicles. The emissions from construction of the pipeline, compressor station, and meter stations would comply with the mobile source requirements of 40 CFR 85 and the dust control requirements of Arizona, the Mojave Desert AQMD, and the Imperial County APCD. The operation emissions are discussed in the following paragraphs.

Ehrenberg Compressor Station

The Rolls Royce compressor configuration, consisting of four 7,200-hp turbines with generator operation limited to 35 percent, is a higher emission scenario for the Ehrenberg Compressor Station than the Solar compressor configuration. Therefore, the emissions from the Rolls Royce configuration are summarized in table 5.11.1-1 as a conservative emissions estimate. As shown in table 5.11.1-1, the potential emissions from the Ehrenberg Compressor Station would be below 100 tpy for PM₁₀, SO₂, NO₂, VOC, and CO. No lead or leaded compounds are present in natural gas combustion exhaust; therefore, no lead would be emitted from

the compressor station. Since all emission units would burn pipeline quality natural gas, the quantity of PM₁₀ and SO₂ emissions would be small. As shown in table 5.11.1-2, the total HAP emissions from the Ehrenberg Compressor Station would be below 10 tpy for any one HAP and below 25 tpy for all HAPs combined. Therefore, the compressor station would not be subject to the NSR/PSD regulations or Title V permitting.

TABLE 5.11.1-1											
Ehrenberg Compressor Station Criteria Pollutant Emissions Summary <u>a/</u>											
Unit	No. of Units	Pollutant									
		NO _x		CO		VOC		SO ₂		PM ₁₀	
		lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Rolls Royce Turbines 7,200 hp	3	5.66	74.4	6.89	90.5	1.97	25.9	0.19	2.5	0.41	5.4
Backup Generator	1	6.4	9.8	5.4	8.3	0.9	1.4	0.044	0.067	0.001	0.002
Total			84.2		98.8		27.3		2.6		5.4
<u>a/</u> Hourly emission rates are based on emissions from one unit. Since the station would be limited to operating only three units at a time, annual emission rates are based on the total for three units operating 8,700 hours per year and the backup generator operating 3,066 hours per year.											
NO _x nitrogen oxides											
CO carbon monoxide											
VOC volatile organic compounds											
SO ₂ sulfur dioxide											
PM ₁₀ particulate matter less than 10 micrometers in diameter											
lb/hr pounds per hour											
tpy tons per year											

TABLE 5.11.1-2		
Ehrenberg Compressor Station Total HAP Emissions Summary		
Pollutant	Ehrenberg Compressor Station Emissions <u>a/</u> (tpy)	Title V Permit Threshold (tpy)
Formaldehyde	0.16	10
Other HAPs	0.03	
Total	0.19	25
<u>a/</u> Emissions listed are calculated for one gas turbine based on AP-42 emission factors.		

NSPS Subpart GG would be applicable to the gas turbines at the compressor station. Subpart GG establishes a NO_x limit as well as an SO₂ limit. When calculated, the NSPS Subpart GG NO_x limit for most turbines is approximately 100 ppm. The SO₂ limit can be met in one of two ways: emit less than 150 ppmv of SO₂, or burn fuel with less than 0.8 weight percent sulfur. In either compressor configuration, the gas turbines at the Ehrenberg Compressor Station would be equipped with low NO_x combustors (SoLoNO_x technology) to limit the NO_x emissions to 25 ppm. The natural gas that would be fired in the turbines would be pipeline quality natural gas, which would keep the sulfur content of the fuel below 0.8 weight percent.

Since the station is subject to NSPS Subpart GG, the station would be required to obtain a Part 70 operating permit. According to R18-2-302 of the AAC, the Ehrenberg Compressor Station would be required to obtain a Class 2 Arizona operating permit. NBP is preparing an application for this permit for submittal to the Arizona Department of Environmental Quality.

Ogilby Meter Station

The only emission unit at the Ogilby Meter Station would be a 50-hp natural gas-fired backup power generator, which would produce emissions during emergency backup power situations. The emissions from the generator would be very small (less than 0.5 lb/hr of NO_x) due to the small size of the generator as well as the infrequent operation of the unit. The meter station is not subject to the NSR or PSD regulations. As stated in Rule 202 of the Imperial County APCD regulations, any internal combustion engine rated at 50 brake hp or less is not required to obtain a construction or operating permit. No NSPS regulations exist for internal combustion engines; therefore, NSPS is not applicable to the meter station.

5.11.2 Noise

5.11.2.1 General Impact and Mitigation

Noise would be generated during the construction phase of the pipeline project and during the construction and operation of the compressor station. Pipeline construction would proceed at rates ranging from several hundred feet to 1 mile per day. However, due to the assembly-line method of construction, construction activities in any one area could last from several weeks to several months on an intermittent basis. Construction equipment would be operated on an as-needed basis during this period. While individuals in the immediate vicinity of the construction activities would experience an increase in noise, this effect would be temporary and local. Nighttime noise due to construction activity normally would be absent, since most construction would be limited to daytime hours, except for at the Colorado River and the All American Canal, which would be directional drilled. Directional drilling operations may require 24-hour-a-day operations, but the duration of drilling activities would be generally limited to a few weeks.

During operation there may be short-term noise impacts from the compressor station or other aboveground pipeline facilities due to maintenance or gas being released during a blowdown. Blowdowns typically occur when gas is evacuated from compressor station piping or the pipeline for maintenance. Occasionally, equipment can malfunction, causing vibration generated by compression equipment to be transmitted to an aboveground pipeline. This is more likely to occur in reciprocating engine-driven compressors than in turbine-driven compressors. Aboveground pipelines are usually insulated by noise-absorbing material to mitigate noise or vibration (very low frequency noise) from being transmitted to the air. Once the pipeline is below ground, the ground would absorb vibration noise.

5.11.2.2 Site-specific Impact and Mitigation

Ehrenberg Compressor Station

In 1974, the EPA published *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*. This publication evaluates the effects of environmental noise with respect to health and safety. The EPA document provides information for state and local governments to use in developing ambient noise standards. The EPA has determined that in order to protect the public from outdoor activity interference and annoyance, noise levels should not exceed an L_{dn}

of 55 dBA at residences. This criterion is useful to evaluate the potential noise impact from operation of the proposed Ehrenberg Compressor Station.

Neither Arizona nor California has statewide noise regulations that would limit noise from the facility. Noise is regulated at the local level in both states. In La Paz County, the Arizona Department of Community Development has a nuisance ordinance that prohibits any actions that are "offensive to the senses." No numerical standards for noise exist in the county. The nearest private residences that could be affected by noise from the project are across the river in Riverside County, California. The General Plan for Riverside County contains a noise element similar to all the other counties in California that defines noise levels up to 60 dBA L_{dn} at residences as acceptable.

An increase in noise during the operational phase of the project would be primarily limited to areas in the vicinity of the Ehrenberg Compressor Station. The components of the proposed Ehrenberg Compressor Station that would impact the local noise environment are the four gas-fired turbines and the associated exhaust stacks, air inlets, lube oil coolers, and gas coolers. The turbines would be enclosed in an 80- by 200-foot building and only three would operate at any given time. The associated equipment would either extend outside the building or would be wholly located outside. Principal noise sources at compressor stations include the air inlet, exhaust, and casing of the engines. Secondary noise sources include cooling fans, yard piping, and valves. Noise from the relief valves, blowdown stacks, and emergency electrical generation equipment would be infrequent. The amount of silencing required for the equipment and piping would depend on the station's location, size, and proximity to NSAs. NBP has not provided specific details of noise control measures that would be used to mitigate noise impacts. Once the detailed design of the station is complete, NBP would file with the FERC and the CSLC a description and specifications of all noise control measures to be employed at the station. Noise impacts from the proposed compressor units would generally be reduced by: installing building, engine, and piping insulation; installing acoustic louvers; improving the inlet and exhaust silencers; or by using special oil coolers. The amount of noise reduction would depend on the extent of noise mitigation measures installed.

Using the NoiseCalc model, NBP estimated the impacts of the compressor station on the noise environment at the five NSA locations for both compressor configurations. Table 5.11.2-1 identifies the nearby NSAs and the estimated noise impact due to the operation of the proposed compressor station equipment. Noise impacts are based on typical manufacturer's equipment that would be installed at the Ehrenberg Compressor Station. NBP states that the Ehrenberg Compressor Station would be designed not to exceed an L_{dn} noise level of 55 dBA at the nearest NSA (NSA 3) for either of the compressor configurations. As shown in table 5.11.2-1, the predicted noise impact of the proposed compressor station at NSA 3, approximately 1,379 feet north of the proposed compressor building, would be either 54.7 dBA or 55.0 dBA depending on the compressor configuration. The predicted noise impact of the compressor station at the other NSAs would vary from 42.2 to 50.3 dBA, depending on the NSA and the compressor configuration.

TABLE 5.11.2-1			
Predicted Noise Level Contribution at Nearby Noise-Sensitive Areas <u>a/</u> Ehrenberg Compressor Station			
Noise-Sensitive Area	Distance (feet) and Direction from Compressor Station	Rolls Royce Compressor Configured Station to L _{dn} (dBA)	Solar Compressor Configured Station to L _{dn} (dBA)
Location #1 Residence 14600 Riviera Drive	2,252 NW	50.3	49.7
Location #2 Residence 16020 Riviera Drive	4,672 SW	43.2	42.2
Location #3 Pipeline Caretaker House	1,379 N	55.0 <u>b/</u>	54.7
Location #4 Best Western Flying J Motel	3,139 NE	47.1	46.4
Location #5 Sportland Mobile Home Park	3,568 NNE	45.9	45.1
<u>a/</u> Proposed compressor station operating at full load. <u>b/</u> Additional noise attenuation was assumed for the exhaust stack, combustion air inlets, lube oil coolers and gas after coolers to keep the station L _{dn} at NSA 3 below 55 dBA for the Rolls Royce compressor configuration. dBA = decibels of the A-weighted scale L _{dn} = day-night sound level L _{eq} = equivalent sound level N = north NE = northeast NNE = north-northeast NW = northwest SW = southwest			

NBP's analysis predicts that the Ehrenberg Compressor Station would produce noise levels that do not exceed an L_{dn} of 55 dBA, the level that protects the public from outdoor activity interference and annoyance in residential areas. However, these noise levels are calculated based on installation of proposed noise abatement measures. To ensure that the actual noise resulting from the operation of the proposed compressor station is below an L_{dn} of 55 dBA, **we recommend that:**

- **NBP conduct a noise survey to verify that the noise from the Ehrenberg Compressor Station operated at full load does not exceed an L_{dn} of 55 dBA at any NSAs, and file the results of the noise survey with the FERC and the CSLC no later than 60 days after placing the compressor station in service. If the noise attributable to the operation of the compressor station at full load exceeds an L_{dn} of 55 dBA at any nearby NSAs, NBP should file a report on what changes are needed and should install additional noise controls to meet that level within 1 year of the in-service date. NBP should confirm compliance with the L_{dn} of 55 dBA requirement by filing a second noise survey with the FERC and the CSLC no later than 60 days after it installs the additional noise controls.**

Ogilby Meter Station

The Ogilby Meter Station would not be a major source of noise. Since the nearest NSA is located more than 1 mile away, noise from the meter station would be unnoticeable. Therefore, we believe noise impacts from the station would be negligible.

5.12 RELIABILITY AND SAFETY

The transportation of natural gas by pipeline involves some risk to the public in the event of an accident and subsequent release of gas. The greatest hazard is a fire or explosion following a major pipeline rupture.

Methane, the primary component of natural gas, is colorless, odorless, and tasteless. It is not toxic but is classified as a simple asphyxiate, posing a slight inhalation hazard. If methane is breathed in high concentration, oxygen deficiency can occur, resulting in serious injury or death.

Methane has an ignition temperature of 1,000 degrees Fahrenheit and is flammable at concentrations between 5 and 15 percent in air. Flammable concentrations of methane within an enclosed space in the presence of an ignition source can explode. However, because methane is buoyant at atmospheric temperatures and disperses rapidly in air, unconfined mixtures of methane in air are rarely explosive.

5.12.1 Safety Standards

The DOT is mandated to provide pipeline safety under USC, Title 49, Chapter 601. The Research and Special Programs Administration's (RSPA) Office of Pipeline Safety (OPS) administers the national regulatory program to ensure the safe transportation of natural gas and other hazardous materials by pipeline. It develops safety regulations and other approaches to risk management that ensure safety in the design, construction, testing, operation, maintenance, and emergency response of pipeline facilities. Many of the regulations are written as performance standards, which set the level of safety to be attained and allow the pipeline operator to use various technologies to achieve safety. The RSPA ensures that people and the environment are protected from the risk of pipeline incidents. This work is shared with state agency partners and others at the Federal, state, and local level. In Arizona, the project would be inspected by the Arizona Corporation Commission (ACC), which would act as the Federal agent for the southwest region of the OPS. In California, the North Baja Pipeline Project would be inspected and monitored by the western region of the OPS.

The DOT pipeline standards are published in Parts 190-199 of Title 49 of the CFR. Part 192 of 49 CFR specifically addresses natural gas pipeline safety issues. It does not, however, address other issues such as siting and routing, bond issues, etc. These items, in part, are a matter of private negotiation between pipeline companies and landowners and/or local government zoning boards. As an example, the city of Blythe prefers siting utilities within public rights-of-way, such as roads, for safety reasons. Siting and routing are also the responsibility of the FERC and the cooperating agencies (*e.g.*, the CSLC, the BLM, and the BOR) and are part of this draft EIS/EIR and draft plan amendment.

Under a Memorandum of Understanding (MOU) on Natural Gas Transportation Facilities dated January 15, 1993 between the DOT and the FERC, the DOT has the exclusive authority to promulgate Federal safety standards used in the transportation of natural gas. Section 157.14(a)(9)(vi) of the FERC's regulations requires that an applicant certify that it will design, install, inspect, test, construct, operate, replace, and maintain the facility for which a Certificate is requested in accordance with Federal safety standards and plans for maintenance and inspection, or shall certify that it has been granted a waiver of the requirements of the safety standards by the DOT in accordance with Section 3(e) of the Natural Gas Pipeline Safety Act. The FERC accepts this certification and does not impose additional safety standards. If the Commission becomes aware of an existing or potential safety problem, there is a provision in the MOU to promptly alert the DOT. The MOU also provides for referring complaints and inquiries made by state and local governments and the general public that involve safety matters related to pipelines under the

Commission's jurisdiction. The FERC also participates as a member of the DOT's Technical Pipeline Safety Standards Committee, which determines if proposed safety regulations are reasonable, feasible, and practicable.

The pipeline and aboveground facilities associated with the North Baja Pipeline Project would be designed, constructed, operated, and maintained in accordance with the DOT Minimum Federal Safety Standards in 49 CFR 192. These regulations, which are intended to protect the public and to prevent natural gas facility accidents and failures, include specifications for material selection and qualification; odorization of gas; minimum design requirements; and protection of the pipeline from internal, external, and atmospheric corrosion. NBP plans to exceed the DOT standards between MPs 0.0 and 11.7 of the pipeline route (see discussion of class locations below).

During the public scoping meetings for the North Baja Pipeline Project, participants asked about agency involvement in pipeline inspections and the number of pipeline inspectors. Both the western region of the OPS and the ACC employ 12 full-time employees dedicated to safety inspections and facility audits. These inspectors would complete inspections during construction of the pipeline to ensure that materials and construction methods meet the DOT standards. Following construction, OPS and ACC inspectors would conduct audits of NBP's facilities typically once every 2 years. These audits would consist of reviewing operation and maintenance records, evaluating emergency procedures, and performing random field inspections of the natural gas facilities.

Part 192 also defines area classifications, based on population density in the vicinity of the pipeline, that correspond to minimum safety requirements. The class location unit is an area that extends 220 yards on either side of the centerline of any continuous 1-mile length of pipeline. The four area classifications are defined as follows:

- Class 1 - location with 10 or fewer buildings per mile intended for human occupancy;
- Class 2 - location with more than 10 but less than 46 buildings per mile intended for human occupancy;
- Class 3 - location with 46 or more buildings per mile intended for human occupancy or where the pipeline lies within 100 yards of any building or small well-defined outside area occupied by 20 or more people during normal use; and
- Class 4 - location where buildings with four or more stories aboveground are prevalent per mile.

Class locations representing more populated areas require higher safety factors in pipeline design, testing, and operation. Pipelines constructed on land in Class 1 locations must be installed with a minimum depth of cover of 30 inches in normal soil and 18 inches in consolidated rock. All pipelines installed in navigable rivers, streams, and harbors must have a minimum cover of 48 inches in soil or 24 inches in consolidated rock. Class 2, 3, and 4 locations, as well as drainage ditches of public roads and railroad crossings, require a minimum cover of 36 inches in normal soil and 24 inches in consolidated rock.

Class locations also specify the maximum spacing allowed for sectionalizing block valves (referred to as MLVs in other sections of this document). Part 192 regulations require at least one sectionalizing block valve every 10.0 miles in Class 1 locations, every 7.5 miles in Class 2 locations, every 4.0 miles in Class 3 locations, and every 2.5 miles in Class 4 locations. Pipe wall thickness and pipeline design pressures,

hydrostatic test pressures, maximum allowable operating pressure, inspection and testing of welds, and frequency of pipeline patrols and leak surveys must also conform to higher standards in more populated areas.

During the public scoping process questions were raised about the use of an odorant as a leak detection method. Under certain conditions, the DOT requires the introduction of an odorant into the gas stream of a transmission pipeline located in Class 3 and Class 4 locations. Because none of NBP's facilities are in Class 3 or 4 locations, NBP would not be required to use an odorant. During the scoping meeting held in Blythe, California, NBP explained that odorants have a tendency to change to a liquid state at high pressure, which can adversely affect pipeline equipment and the ability of end-users to use the natural gas. While NBP would not be required to use an odorant, NBP would be required to comply with other DOT leak detection requirements such as leakage surveys, aerial surveys, and pedestrian surveys of its facilities.

Approximately 85 percent of the pipeline route would be located within a Class 1 area (MPs 11.7 to 79.8). NBP would comply with Class 1 requirements in this area. The remaining 15 percent of the pipeline route between MPs 0.0 and 11.7 is in a Class 2 area. In this area, however, NBP proposes to exceed DOT requirements by using pipe that meets Class 3 requirements and by installing the MLVs at a closer interval than required by the DOT.

Part 192 includes a requirement for the operator of the pipeline to establish a written plan governing operation and maintenance activities. Under section 192.615, each pipeline operator must also establish an emergency plan that includes procedures to minimize the hazards in a natural gas pipeline emergency. Key elements of the plan include procedures for:

- receiving, identifying, and classifying emergency events, gas leakage, fires, explosions, and natural disasters;
- establishing and maintaining communications with local fire, police, and public officials, and coordinating emergency response;
- making personnel, equipment, tools, and materials available at the scene of an emergency;
- protecting people first and then property, and making them safe from actual or potential hazards; and
- emergency shutdown of the system and safe restoration of service.

While NBP's primary safety focus is accident prevention, NBP would, in accordance with Part 192, develop an emergency response plan, which would be coordinated and tested (through drills and exercises) with local fire/police departments and emergency management agencies. This plan would also be reviewed by the DOT OPS and is subject to DOT rules and regulations.

A comment was received during the scoping process about the safety of the Blythe Energy Project and its components. NBP does not have an agreement to supply the Blythe Energy Project and therefore is not considered a component of the project (see table 1.5-1).

5.12.2 Pipeline Accident Data

Since February 9, 1970, 49 CFR 191 has required all operators of transmission and gathering systems to notify the DOT of any reportable incident and to submit a report on form F7100.2 within 20 days. Reportable incidents are defined as any leaks that:

- caused a death or personal injury requiring hospitalization;
- required taking any segment of transmission line out of service;
- resulted in gas ignition;
- caused estimated damage to the property of the operator, or others, of a total of \$5,000 or more;
- required immediate repair on a transmission line;
- occurred while testing with gas or another medium; or
- in the judgement of the operator was significant, even though it did not meet the above criteria.

The DOT changed reporting requirements after June 1984 to reduce the amount of data collected. Since that date, operators must report only incidents that involve property damage of more than \$50,000, injury, death, or release of gas, or that are otherwise considered significant by the operator. Table 5.12.2-1 presents a summary of incident data for the 1970 to 1984 and 1991 to 1997 periods, as well as more recent incident data for 1998 through 1999, recognizing the difference in reporting requirements. The 14.5-year period from 1970 through June 1984, which provides a larger universe of data and more basic report information than subsequent years, has been subject to detailed analysis as discussed in the following sections (Jones *et al.*, 1986).

During the 14.5-year period, 5,862 service incidents were reported over the more than 300,000 total miles of natural gas transmission and gathering systems nationwide. Service incidents, defined as failures that occur during pipeline operation, remaining fairly constant over this period with no clear upward or downward trend in annual totals. In addition, 2,013 test failures were reported. Correction of test failures removed defects from the pipeline before operation.

Additional insight into the nature of service incidents may be found by examining the primary factors that caused the failures. Table 5.12.2-1 provides a percentage distribution of the causal factors, as well as the annual frequency of each factor per 1,000 miles of pipeline in service.

The pipelines included in the data set in table 5.12.2-1 vary widely in terms of age, pipe diameter, and level of corrosion control. Each variable influences the incident frequency that may be expected for a specific segment of pipeline.

TABLE 5.12.2-1			
Industry Service Incidents by Cause per 1,000 miles-year (percentage)			
Cause	1970 to 1984	1991 to 1997	1998 to 1999
Outside forces	0.70 (53.5%)	0.10 (41.2%)	0.08 (35.9%)
Corrosion	0.22 (16.6%)	0.06 (22.6%)	0.05 (23.6%)
Construction or material defect	0.27 (21.7%)	0.03 (11.6%)	0.04 (17.7%)
Other	0.11 (8.2%)	0.06 (24.7%)	0.05 (22.8%)
Total	1.30 (100%)	0.25 (100%)	0.23 (100%)

The dominant incident cause is outside forces, constituting 53.5 percent of all service incidents between 1970 and 1984. Outside forces incidents result from the encroachment of mechanical equipment, such as bulldozers and backhoes; from earth movements due to soil settlement, washouts, or geological hazards; from weather effects, such as winds, storms, and thermal strains; and from willful damage. Table 5.12.2-2 shows that human error in equipment usage was responsible for about 81 percent of outside force incidents. Since April 1982, operators have been required to participate in "One Call" public utility programs in populated areas, to minimize unauthorized excavation activities in the vicinity of pipelines. The "One Call" program is a service used by public utilities and some private sector companies (e.g., oil pipelines and cable television) to provide preconstruction information to contractors or other maintenance workers on the underground location of pipes, cables, and culverts. The 1998 through 1999 data show that the portion of incidents caused by outside forces has decreased to 35.9 percent. In order to minimize the potential for incidents caused by outside forces, the City of Blythe recommends that the North Baja pipeline be installed within a public road right-of-way (Hull, 2001).

TABLE 5.12.2-2	
Outside Forces Incidents by Cause (1984 to May 2000)	
Cause	Percent
Equipment operated by outside party	73.1
Equipment operated by or for operator	7.7
Earth Movement	12.8
Weather	3.4
Other	3.0

Older pipelines have a higher frequency of outside forces incidents, partly because their location may be less well known and less well marked than newer lines. In addition, the older pipelines contain a disproportionate number of smaller diameter pipelines, which have a greater rate of outside forces incidents. Small-diameter pipelines are more easily crushed or broken by mechanical equipment or earth movements.

The frequency of service incidents is strongly dependent on pipeline age. While pipelines installed since 1950 exhibit a fairly constant level of service incident frequency, pipelines installed before that time have a significantly higher rate, partially due to corrosion. Older pipelines have a higher frequency of corrosion incidents, since corrosion is a time-dependent process. Further, more advanced coatings and cathodic protection to reduce corrosion potential are generally used on newer pipe.

Table 5.12.2-3 clearly demonstrates the effectiveness of corrosion control in reducing the incidence of failures caused by external corrosion. The use of both an external protective coating and a cathodic protection system, required on all pipelines installed after July 1971, significantly reduces the rate of failure compared to unprotective or partially protected pipe. The data show that bare, cathodically protected pipe actually has a higher corrosion rate than unprotected pipe. This anomaly reflects the retrofitting of cathodic protection to actively corroding spots on pipes.

TABLE 5.12.2-3 External Corrosion by Level of Control (1970 to 1984)	
Corrosion Control	Incidents per 1,000 miles/year
None - bare pipe	0.42
Cathodic protection only	0.97
Coated only	0.40
Coated and cathodic protection	0.11

5.12.3 Impact on Public Safety

The service incidents summarized in table 5.12.2-1 include pipeline failures of all magnitudes with widely varying consequences. About two-thirds of the incidents were classified as leaks; the remaining one-third were classified as ruptures, implying a more serious failure. Fatalities or injuries occurred in four percent of the service incidents reported in the 14.5-year period from 1970 through June 1984.

Table 5.12.3-1 presents the average annual fatalities that occurred on onshore and offshore natural gas transmission and gathering lines from 1970 to 1999. The data show that the total annual average for the period 1986 through 1999 was 2.9 fatalities per year. The simplified reporting requirements in effect after June 1984 do not differentiate between employees and nonemployees.

TABLE 5.12.3-1 Annual Average Fatalities – Gas Transmission and Gathering System <u>a/</u> <u>b/</u>			
Year	Employees	Nonemployees	Total
1970 to June 1984	2.4	2.6	5.0
1984 to 1999	NA	NA	3.5
1984 to 1999	NA	NA	2.3 <u>c/</u>
<u>a/</u> 1970 through June 1984 – American Gas Association, 1986.			
<u>b/</u> U.S. DOT Hazardous Materials Information System.			
<u>c/</u> Without 18 offshore fatalities occurring in 1989 – 11 fatalities resulted from a fishing vessel striking an offshore pipeline and 7 fatalities resulted from an explosion on an offshore production platform			
NA = Employee/nonemployee breakdown not available after June 1984			

The nationwide totals of accidental fatalities from various manmade and natural hazards as listed in table 5.12.3-2 provide a relative measure of the industry-wide safety of natural gas pipelines. Direct comparisons between accident categories should be made cautiously, since individual exposures to hazards

are not uniform among categories. Nevertheless, the average of 2.9 public fatalities per year is relatively small considering the more than 311,000 miles of transmission and gathering lines in service nationwide.

TABLE 5.12.3-2 Annual Nationwide Accidental Deaths <u>a/</u>	
Type of Accident	Fatalities
All accidents (1993) <u>b/</u>	90,523
Motor vehicles	43,649
Falls	14,986
Drowning	3,488
Poisoning	9,510
Fires and burns	3,741
Suffocation by ingested object	3,206
Tornado, flood, and earthquake (1984-93 average)	181
All liquid and gas pipelines (1986-99 average) <u>b/</u>	24
Gas Transmission and gathering lines (1986-99 average) <u>c/</u>	2.9
<u>a/</u> All data, unless otherwise noted, reflect statistics from the U.S. Department of Commerce, Bureau of the Census, Statistical Abstract of the United States 118 th Edition (Published 1998).	
<u>b/</u> U.S. National Center for Health Statistics, Vital Statistics of the United States, annual.	
<u>c/</u> U.S. Department of Transportation, Office of Pipeline Safety, www.ops.dot.gov/stats.htm .	

The available data show that natural gas pipelines continue to be a safe, reliable means of energy transportation. Based on approximately 311,000 miles in service, the rate of public fatalities for the nationwide mix of transmission and gathering lines in service is about 0.009 per 1,000 miles per year. Using this rate, the North Baja Pipeline Project might be expected to result in a public fatality every 1,388 years. Based on these numbers, we believe the proposed NBP facilities would represent only a slight increase in risk to the nearby public.

5.13 CUMULATIVE AND GROWTH-INDUCING IMPACTS

5.13.1 Cumulative Impacts

Cumulative impacts may result when the environmental effects associated with a proposed project are superimposed on or added to either temporary (construction related) or permanent (operation related) impacts associated with past, present, or reasonably foreseeable future projects. Although the individual impact of each separate project might not be significant, the additive effects of multiple projects could be.

Existing environmental conditions in the project area reflect changes based on past projects and activities. Much of the project area is rural and relatively undeveloped. However, significant changes to portions of the project area have resulted from activities related to agriculture, grazing, mining, water diversion, transportation projects, recreation, exotic species introductions, and residential/commercial development.

Table 5.13.1-1 lists present or reasonably foreseeable future projects or activities that may cumulatively or additively impact resources that would be affected by construction of the North Baja Pipeline Project. Projects and activities included in this analysis are primarily those located near areas directly affected by construction of the North Baja Pipeline Project. More distant projects are not assessed because their impact would generally be localized and therefore would not contribute significantly to cumulative impact in the proposed project area. Nonjurisdictional electric generation facilities that would be built or expanded due, at least in part, to construction of the North Baja Pipeline Project are also included in our analysis because the pollutants emitted from these facilities could potentially have a cumulative effect on the region's air quality. Although several of these projects reflect the growing demand for energy and telecommunication services, not all of the projects are likely to be constructed. Additionally, while we have identified the tentative construction schedule of these projects when available, the actual construction schedules of these projects will depend on factors such as economic conditions, the availability of funds, and political considerations.

The potential impacts associated with these projects that are most likely to be cumulatively significant are related to vegetation and wildlife (including special status species), land use, recreation, visual resources, socioeconomics, cultural resources, air quality, and noise. The potential cumulative impact associated with each of these resources is discussed below.

Vegetation and Wildlife

When projects are constructed at the same time or are timed closely together, they would have a cumulative impact on vegetation and wildlife living in the area where the projects would be built. As discussed in section 5.5.2, the removal of desert vegetation would have long-term consequences because the regeneration of vegetation in arid desert environments is slow. This effect would be most severe in desert wash woodlands, which are less prevalent locally and provide more diverse wildlife habitat than Sonoran and creosote bush scrub.

When considered with other present and foreseeable future projects in the area, the North Baja Pipeline Project would have a cumulative impact on vegetation and wildlife. Right-of-way clearing for the pipeline and fiber optic projects would be in an area that experiences heavy OHV use, which has caused damage to brush in the open desert. Additionally, portions of both the North Baja Pipeline Project and the AT&T NexGen Fiber Optic Project routes are located along or nearby SR 78. The collocation of these two projects along the SR 78 corridor would contribute cumulatively to a local degradation of vegetation and wildlife communities.

The amount of desert wash woodland and Sonoran creosote bush scrub habitat that may be affected by these projects is relatively small compared to the abundance of the habitat in the area. While these projects could potentially fragment vegetation/habitat, impacts would be less when adjacent to existing rights-of-way. All of the projects occurring in California would involve mitigation measures designed to minimize the potential for long-term chronic erosion, increase the stabilization of site conditions, control the spread of noxious weeds, and minimize the potential for accidental spills of materials into surface waters. This mitigation would minimize the degree and duration of the cumulative impact of these projects. Moreover, compensatory off-site mitigation would likely be required for each of these projects to offset interim losses in habitat function for desert tortoise and other wildlife during the time the areas disturbed by construction are restored or recovered. Because off-site mitigation would involve purchasing and providing some protection and potential management to lands in the region that are similar to what would be disturbed, a potential long-term benefit of the project could result from the projects. Section 5.7.3 includes further discussion of cumulative impact on listed species.

TABLE 5.13.1-1

**Existing or Proposed Activities Cumulatively Affecting Resources of
Concern for the North Baja Pipeline Project**

		Primary Environmental Impact <u>a/</u>							
Activity	Description	Vegetation and Wildlife	Land Use	Recreation	Visual Resources	Socioeconomics	Cultural Resources	Air Quality	Noise
Present Project or Activities									
Agriculture	Irrigation dependent agriculture in the Palo Verde Valley. Crops include cotton, alfalfa, onions, and melons.	✓	✓		✓	✓		✓	✓
Mining	BOR-operated rock quarry.	✓	✓		✓				✓
Recreation	Camping, fishing, OHV-based recreation.	✓	✓		✓	✓	✓	✓	✓
Water Diversion	Use of water from the Colorado River for agriculture and municipalities.	✓	✓			✓			
Reasonably Foreseeable Future Projects or Activities									
AT&T NexGen Fiber Optic Project	A proposed fiber optic line that, in the project area, would follow a route roughly parallel to the northern half of the proposed North Baja pipeline project route. The project is currently undergoing CEQA/NEPA review, and, if approved, is likely to be constructed before the North Baja Pipeline Project.	✓				✓	✓		
BCP and SEP Transmission Line Projects	Construction of two new 230,000-volt overhead transmission lines across the Mexico-United States border adjacent to an existing transmission line west of Calexico/Mexicali. The U.S. Department of Energy is preparing environmental assessments for these project.	✓	✓		✓				
Blythe Energy Center	A proposed 520-MW power plant under development just northwest of Blythe, California. Natural gas to fuel the project would be supplied via an interconnect with the SoCal system and/or El Paso system.	✓	✓		✓	✓		✓	✓
Gasoducto Bajanorte Project	Construction of a 135-mile-long pipeline in Baja California, Mexico.	✓				✓		✓	✓
Imperial Mine	An EIS for a proposed 1,600-acre gold mine in eastern Imperial County is currently being prepared by the BLM.	✓	✓	✓	✓	✓	✓		✓
Level 3 Fiber Optic Project	A proposed fiber optic line with a route roughly parallel to I-8. This project is likely to begin construction in early 2001.	✓				✓	✓		
Mexicali Power Plants	Construction of four power plants (250-, 500-, 600-, and 750-MW combined-cycle) near Mexicali, Baja California, Mexico.	✓	✓		✓	✓		✓	

TABLE 5.13.1-1 (cont'd)

**Existing or Proposed Activities Cumulatively Affecting Resources of
Concern for the North Baja Pipeline Project**

Activity	Description	Primary Environmental Impact ^{a/}						
		Vegetation and Wildlife	Land Use	Recreation	Visual Resources	Socioeconomics	Cultural Resources	Air Quality Noise
Otay Mesa Generating Project	Construction of a 500-MW combined-cycle power plant in San Diego County, California.	✓	✓		✓	✓		✓
Palo Verde Nuclear Plant 500 kV Intertie	A proposed intertie that would run east-west from near Phoenix, Arizona through the southern part of the North Baja Pipeline Project area. The project is currently in the planning stage.	✓			✓	✓	✓	
Presidente Juarez Power Plant	Conversion of existing 320-MW liquefied petroleum gas-fired and 200-MW oil-fired electricity generation units to natural gas and a new 550-MW natural gas-fired unit in Tijuana, Mexico.					✓		✓
Yucca Power Plant	There are plans to expand the Yucca Power Plant in Yuma, Arizona. Expansion of the plant is currently limited by existing pipeline capacity constraints. Expansion would require an additional 85 MMcfd of natural gas.		✓			✓		✓ ✓

^{a/} Only known impacts are listed.

Land Use

The North Baja Pipeline Project and several of the other foreseeable future projects could result in both temporary and permanent changes to current land uses. Because desert habitat dominates most of the land affected by the North Baja Pipeline Project, current land uses are limited in most of the project area. Both the North Baja Pipeline Project and the Blythe Energy Center would temporarily disturb productive farmland during construction and would permanently remove acreage from production in the Palo Verde Valley. From 1995 through 1998, an average of 96,337 acres of irrigated land was used to grow crops in the Palo Verde Valley area of Riverside County (Bilbo, 2000), the chief agricultural area in the vicinity. Slightly more than half of that acreage was devoted to alfalfa hay. The remaining acreage was devoted to irrigated pasture, cotton, wheat, other hay crops, vegetables, and melons. The North Baja Pipeline Project would remove 12.4 acres of agricultural land from production (Ehrenberg Compressor Station). If the other projects in the Palo Verde Valley had the same effect, the cumulative loss of farmland could be about 40 acres. This cumulative loss would still be relatively minor and would equal less than 0.1 percent of the Palo Verde Valley cropland acreage.

Transportation

Current road maintenance in the project area includes repaving, clearing road shoulders, and similar activities. Utility lines for electrical power, telephone, water, gas, and sewer have been or are proposed to be installed along road shoulders or within the road pavement. Where installation occurs in the road, such as is proposed by the North Baja Pipeline Project on 18th Avenue, the traffic would be disrupted or detoured for several days at a time. However, access to residences and businesses would be maintained, so that the impact would be only a temporary inconvenience. Where installation occurs in the road shoulder, such as with fiber optic cable, traffic generally would not be restricted or detoured. Indirectly, workers' cars and construction trucks and equipment being added to the regular traffic could contribute to traffic congestion during construction. Traffic congestion, however, is not expected to be a major problem in the project area even if several projects are being constructed at once. This is because most of the roads in the project area currently have little or no congestion, many construction workers share rides and travel to and from work during off-peak hours, and the projects are spread out over a large area and all the traffic would not be going to the same place at the same time.

Recreation

OHV use occurs throughout much of the open desert portion of the project area, peaking during the winter months. Construction of one or more of the proposed projects could negatively affect the recreation experience during construction. The presence and movement of construction equipment, materials, and workers may be locally disruptive to these recreationists, particularly if more than one project is under construction at any one time. However, this effect would be temporary. Although NBP would work with the BLM to identify areas for which blocking the right-of-way from OHV use would be appropriate and practical and would install blocking measures at these locations, this and other projects could cumulatively increase accessibility to sensitive environmental areas by OHV users.

Visual Resources

The visual character of the existing landscape is defined by historic and current land uses such as agriculture, recreation, mining, conservation, and residential development. The visual qualities of the landscape are further influenced by existing linear installations such as highways, railroads, pipelines, and electrical transmission and distribution lines. Within this context, the proposed compressor station, intertie,

electric generation facilities, and other aboveground facilities would have the most visible impact, while the pipeline and fiber optic projects would be visually subordinated to the existing landscape character and would contribute only incrementally to the overall visual conditions of the surrounding landscape. The total number of proposed aboveground facilities is relatively small and widely distributed, however, and generally would only add marginally to the effect of existing structures in the area. Moreover, the majority of aboveground facilities including those associated with either the North Baja Pipeline Project (e.g., Ehrenberg Compressor Station, Ogilby Meter Station) or the fiber optic projects (e.g., optical amplification sites) would conform with local building and zoning requirements that may regulate the visual appearance of the proposed facilities.

Socioeconomics

Present and reasonably foreseeable future projects could cumulatively impact socioeconomic conditions in the project. Areas where there may be both beneficial and detrimental effects include employment, housing, infrastructure and public services, and traffic.

Employment – The projects considered here would have significant cumulative effects on employment during construction if more than one project is built at a time. Both the North Baja Pipeline Project and the Blythe Energy Center, for example, expect to employ 250 to 350 people during construction. Less than 20 percent of the North Baja Pipeline Project workforce is expected to come from the local area. The AT&T NexGen Fiber Optic Project expects to have a workforce of 15 to 30. If the larger projects are built simultaneously, the demand for workers is likely to exceed the local supply of appropriately skilled labor. On the beneficial side, the increased demand for workers could reduce current unemployment and perhaps lead to higher wages for the duration of construction. Other indirect employment benefits would include temporary service jobs in the local area (e.g., restaurants and gas stations).

Permanent employment would increase slightly in the project area, with the power plants providing the most long-term job opportunities. The Blythe Energy Center, for example, is expected to provide approximately 40 permanent jobs for plant operations. The North Baja Pipeline Project, by contrast, would provide only four permanent jobs, and the AT&T NexGen Fiber Optic Project expects to have no permanent employees in the area. In general, the pipeline, fiber optics, and transmission line projects would add little in the way of cumulative long-term employment in the project area.

Housing – Because of the area's popularity with travelers in the winter months, there is an abundance of temporary housing, including campgrounds and RV parks. The degree of cumulative impact on these housing resources would depend upon the season of project construction and the number of projects being constructed simultaneously. Non-local construction workers would most easily find temporary housing if their projects are constructed in the summer and only one major project is under construction at that time. Non-local workers would have fewer housing options in the winter, particularly if several projects are under construction at once. Regardless, these effects would be temporary, lasting only for the duration of construction and there would be no long-term cumulative effect on housing.

Infrastructure and Public Services – The cumulative impact of the North Baja Pipeline Project and other projects and activities on infrastructure and public services would depend on the number of projects under construction at one time. Small incremental demands from several projects could become difficult for police, fire, and emergency service personnel to address. This problem would be temporary, for the length of construction, and could be mitigated by the various project proponents providing their own personnel to augment the local capability or by providing additional funds or training for local personnel. There would be no long-term cumulative effect on infrastructure and public services.

Cultural Resources

Past disturbances to cultural resource sites in the project area have been related to legal collecting; accidental disturbance by OHV users; intentional destruction or vandalism; and construction and maintenance operations associated with existing roads, railroads, and transmission lines. Each of the currently proposed projects would include mitigation measures designed to avoid or minimize additional direct impacts on cultural resources. Where direct impacts on eligible or listed cultural resources are unavoidable, recovery and curation of significant elements would occur prior to construction. Pressure on nearby sites is likely to continue, however, and would be at least slightly exacerbated by the addition of more cleared rights-of-way in the same general area. Increased access by rights-of-way and service roads would increase the potential for trespass or vandalism at previously inaccessible sites. The proposed pipeline would add incrementally to the effects on cultural resources of the gold mine, fiber optic, power, and transmission line projects in the project area.

Air Quality and Noise

Most of the reasonably foreseeable future projects and activities would produce noise and air contaminants from heavy equipment engines and dust during construction. These effects could add to the ongoing agricultural activities, traffic, and OHV use in the project area. Because the impact of noise is highly localized and attenuates quickly as the distance from the noise source increases, cumulative impacts associated with construction would be unlikely unless one or more of the projects occur at the same time in the same location. However, even short-term additional noise during construction could, for example, create enough disturbance to nesting birds or breeding toads to constitute a potential adverse impact. The majority of these impacts would be limited to the period of construction.

Over the long term, the gas pipeline projects, fiber optics projects, and transmission interties would add little to current air pollution levels. NBP's Ehrenberg Compressor Station would emit air pollutants, but would not be considered a major source.

Indirectly, the North Baja Pipeline Project could result in a cumulative impact on the region's air quality by providing natural gas to new or expanded power plants in the project area (see section 1.5). The North Baja Pipeline would provide natural gas to several power plants. One of these power plants (Otay Mesa Generating Company, LLC) will be located in southern San Diego County, California. The remaining power plants are/would be located in Mexico.

United States air quality regulations require new or modified power plant facilities to obtain the appropriate permits. Issuance of the necessary approvals and permits for the new and modified power plants implies that the associated impact on air quality would be acceptable. For example, the San Diego APCD issued a Determination of Compliance (DOC) for the Otay Mesa Generating Plant on September 22, 2000. The DOC was issued with emission limits for NO_x, SO₂, PM₁₀, VOCs, and CO. Additionally, NO_x emission offsets were obtained at a ratio of 1.2:1 (*i.e.*, 1.2 tpy of NO_x emissions from existing sources will be eliminated for every 1 tpy of NO_x emissions generated by the Otay Mesa Generating Plant). It can be expected that the result will be a net improvement of the ambient air quality in the surrounding area.

Mexican air quality regulations also require new or modified power plant facilities to obtain the appropriate permits. The Mexican power plants that would receive natural gas from the North Baja pipeline must demonstrate compliance with Mexican ambient air quality standards that are generally the same as, and in some cases more stringent than, those of the United States. This implies that the impacts from the power plants in Mexico would also be acceptable in the United States. Table 5.13.1-2 compares the ambient air

standards that must be met for Mexico and those of the United States and California. The ambient air quality standards of California are more stringent than the United States Federal standards.

TABLE 5.13.1-2				
Ambient Air Quality Standards Comparison				
Pollutant	Mexican Standards	Federal Standards	California Standards	Averaging Period
Ozone	0.11 ppm	0.12 ppm	0.09 ppm	1 hour
Sulfur Dioxide	---	---	0.25 ppm	1 hour
	---	0.5 ppm <u>a/</u>	---	3 hour
	0.13 ppm	0.14 ppm	0.04 ppm	24 hour
	0.03 ppm	0.03 ppm	---	Annual
Nitrogen Dioxide	0.21 ppm	---	0.25 ppm	1 hour
	---	0.053 ppm	---	Annual
Carbon Monoxide	11 ppm	9 ppm	9 ppm	8 hour
		35 ppm	20 ppm	1 hour
TSP	260 µg/m ³	---	---	24 hour
	75 µg/m ³	---	---	Annual
PM ₁₀	150 µg/m ³	150 µg/m ³	50 µg/m ³	24 hour
	50 µg/m ³	50 µg/m ³	30 µg/m ³	Annual
Lead	---	---	1.5 µg/m ³	30 day
	1.5 µg/m ³	1.5 µg/m ³	---	3 months
<u>a/</u>	Federal secondary standard for protecting the public welfare from adverse effects (such as acid rain). All other Federal standards listed above are primary standards, which protect the public health with an adequate margin of safety.			
TSP	Total Suspended Particulate			
PM ₁₀	Particulate matter less than 10 microns in diameter			

The burning of natural gas in new or expanded power plants could increase ambient pollutant concentrations in the regional airshed. However, the demand for additional power in the project area cannot be met by currently available non-polluting sources of energy. In fact, the current proposals would minimize possible impact on air quality. For example, if natural gas is replaced by less clean burning fossil fuels to meet this demand, the emissions resulting from the new or expanding power plants could be an estimated 963,400 metric tons of carbon per year higher.

According to NBP, the Energia de Mexicali Plant, the San Luis Rio de Colorado Area Plant, and the Yuma Area Plant have made limited progress in their development. In addition, Blythe Energy may obtain natural gas from a different source and has not made a commitment to take gas from NBP. The three remaining power plants have taken emission limits to reduce their impact on the regional airshed. As shown in table 5.13.1-3, the proposed Otay Mesa Generating Plant in San Diego, California was issued a Determination of Compliance from the San Diego APCD limiting the plant-wide emissions. The Energia Azteca Project and the Termoelectrica de Mexicali Project have each received an MIA. As shown in table 5.13.1-4, both power plants have proposed emission limits or design specifications that are well below the applicable Mexican standards.

TABLE 5.13.1-3 Otay Mesa Power Plant Emission Limits	
Pollutant	Emission Limit (tons/year)
Nitrogen Dioxide (NO ₂)	100
Sulfur Dioxide (SO ₂)	39.4
Particulate Matter (PM ₁₀)	159.6
Volatile Organic Compounds (VOCs)	27.2
Carbon Monoxide (CO)	235.2

TABLE 5.13.1-4 Mexican Power Plant Design Specifications and Proposed Limits			
Pollutant	Energia Azteca Project	Termoelectrica de Mexicali Project	Mexican Regulatory Limit
Nitrogen Oxides (NO _x)	30 ppm	2.5 ppm	139 ppm
Carbon Monoxide (CO)	50 mg/m ³	4.0 ppm	---
Particulate Matter (PM ₁₀)	---	28.42 kg/hr	Not specified for natural gas-fired units
Sulfur Dioxide	Negligible	Negligible	Not specified for natural gas-fired units
ppm parts per million mg/m ³ milligrams per cubic meter kg/hr kilograms per hour			

5.13.2 Growth-inducing Impacts

Section 15126.2 (d) of the *Guidelines for Implementation of the California Environmental Quality Act* calls for the consideration and discussion of growth-inducing impacts in an EIR. As it relates to growth-inducing impacts, section 15126.2 (d) states:

Discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth (a major expansion of a waste water treatment plant might, for example, allow for more construction in service areas). Increases in the population may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects. Also discuss the characteristics of some projects which may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.

As discussed, NBP anticipates adding about four permanent staff to handle project operations, with additional support provided as needed by locally based contractors. This small staff would have little or no impact on the population in the region.

The proposed project would provide an alternative supply of natural gas for permitted electrical generation facilities, primarily located in Mexico. We believe that the demand for energy and the proposed pipeline are a result of, rather than a precursor to, development in this region. Although we recognize that the availability of a new or an alternative source of natural gas may be a contributing factor in stimulating economic and population growth and could result in the construction of additional power infrastructure, any determination as to the location and magnitude of such growth is premature and speculative at this time. Similarly, any statement on the beneficial or detrimental effects of growth indirectly induced by construction of this project would be conjectural.